FOUNDED IN 1856

RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

NOVEMBER 18, 1950

The Terminal Railroad Association of St. Louis reports that General Motors Diesel switching locomotives cost $3.71 an hour *less* per unit to operate and maintain than the steam locomotives they replaced. Savings on fuel, water, maintenance and enginehouse expense total $25,556 a year per unit—a return of 26.94% on investment. Sixteen years and more than two billion unit miles of experience *on the rails* have proved that dieselization with General Motors locomotives is the soundest investment railroads can make.

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS · LA GRANGE, ILLINOIS

HOME OF THE DIESEL LOCOMOTIVE

In Canada: GENERAL MOTORS DIESEL LTD., LONDON, ONTARIO

GENERAL MOTORS LOCOMOTIVES

ORTON

with GM *Dynaflow* Drive

NO SHOCK LOADING on gears, shafts and clutches! Smooth fluid application of power from the engine to load! Stresses cut in half, maintenance and time out for servicing cut to less than half!

CUSHIONED SHOCK MEANS A LOT — not only to machine but to operator! He has perfect control at all times—he can hover over a load, adjust a fraction of an inch without clutch or brake action! Cuts operator and equipment fatigue and wear!

THROTTLE CONTROL! POWER to start a heavy load without "slip-clutching" at high speed— POWER CONTROL to pick up heavy loads smoothly and quickly!

The GM *Dynaflow Drive* is a torque converter *combined* with a fluid clutch. The ORTON Crane with GM *Dynaflow Drive* AUTOMATICALLY PROVIDES THE CORRECT TORQUE in the *exact amount needed* to move the load!

ORTON
Crane and Shovel Co.
608 So. Dearborn Street
Chicago 5 • Illinois

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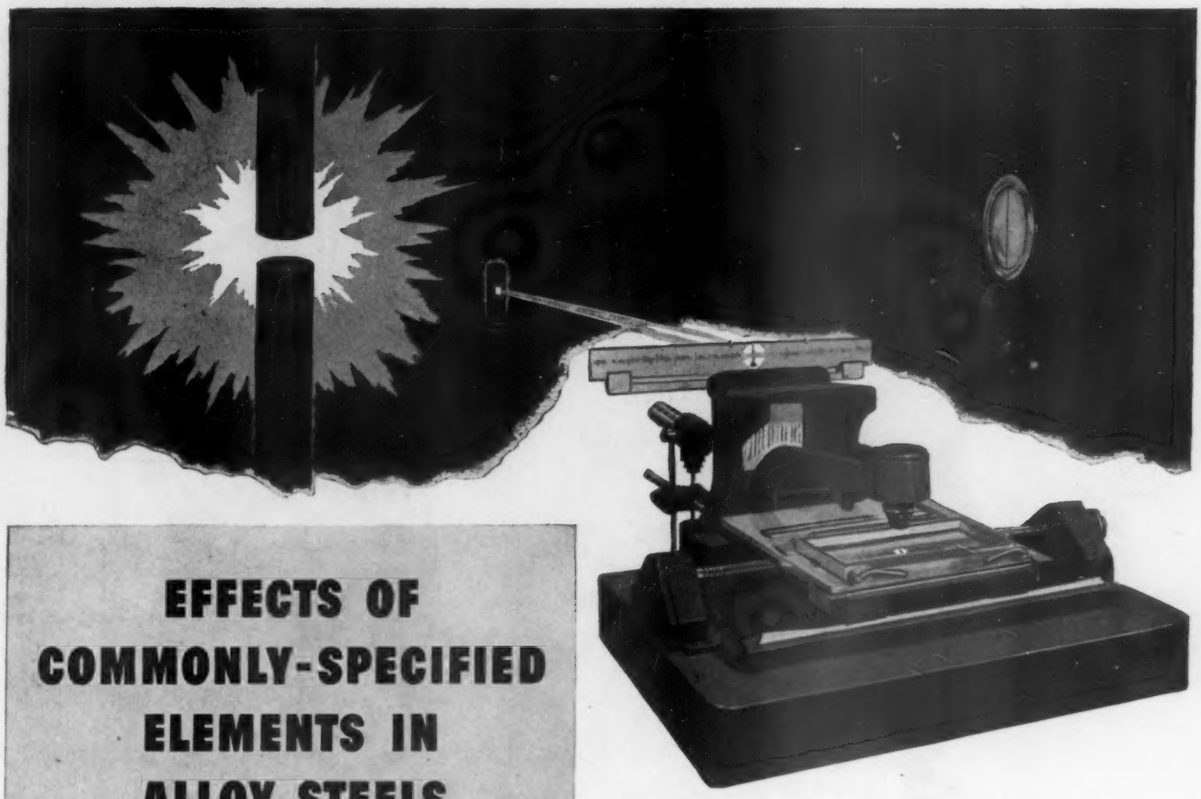

EFFECTS OF COMMONLY-SPECIFIED ELEMENTS IN ALLOY STEELS

The effect of a combination of alloying elements on the properties of an alloy steel is considerably greater than the sum of the effects of these elements if used separately. This inter-relation must be taken into account whenever a change in a specified analysis or composition is evaluated. To simplify the subject we have outlined below some of the individual effects of four of the leading elements used in alloy steels.

NICKEL— One of the fundamental alloying elements, nickel provides steel with such advantages as improved toughness at low temperatures, low distortion in quenching, good resistance to corrosion, and ready response to economical methods of heat-treating. Nickel steels are suitable for case hardening and have excellent resistance to impact, wear and fatigue.

CHROMIUM is an element used primarily to increase the depth-hardenability of steel. It also promotes carburization and improves resistance to abrasion and wear. Used in quantities of over 4.00 pct, it adds considerably to corrosion-resistance. High-chromium steels have relatively good air-hardening properties.

MOLYBDENUM — This element, which does not readily oxidize, provides a large measure of hardenability to steel and is particularly useful where close control of hardenability is required. It greatly increases the high-temperature strength as well as the creep strength. It also provides resistance to many forms of corrosion, and reduces temper brittleness.

VANADIUM is an element used to refine the grain and improve the mechanical-property balance in steels. It is also used to develop the general properties in many alloy grades.

Our metallurgists can be of considerable help to you in selecting the most economical grades of alloy steel for any application. These men will gladly give unbiased advice concerning alloy-steel composition, heat-treatment and machinability.

We manufacture the full range of AISI grades and special analysis steels as well as carbon steels.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation—Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM *ALLOY* STEELS

BETHLEHEM STEEL

did you hear the one about the

Two Traveling Men?

Once there were two traveling men, who boarded separate trains for an overnight journey. One got off next morning full of pep and bounce, ready for a big day's work. "Slept like a top," he reported. "Smoothest ride I ever had."

The other emerged heavy-eyed and pessimistic. "What a ride!" he said. "Almost got jolted out of my berth. Hardly slept a wink." And the point of the story is—which one was *your* passenger? . . . and which one will *stay* your passenger?

• • • • •

If you are now planning on any new trains for de luxe service, you are probably giving the question of passenger comfort a lot of thought. Brakes can't, of course, provide the complete answer—but on a number of roads Westinghouse HSC Electro-pneumatic brake equipment has been a big help in smoothing the ride, and improving and maintaining schedules. Application and release impulses are transmitted simultaneously to every car on the train . . . the Speed Governor Control automatically proportions brake pressure to speeds . . . the Decelostat instantaneously softens braking effort if wheel slip impends.

Westinghouse Air Brake Co.

WILMERDING, PA.

Vol. 129, No. 21 November 18, 1950

RAILWAY AGE

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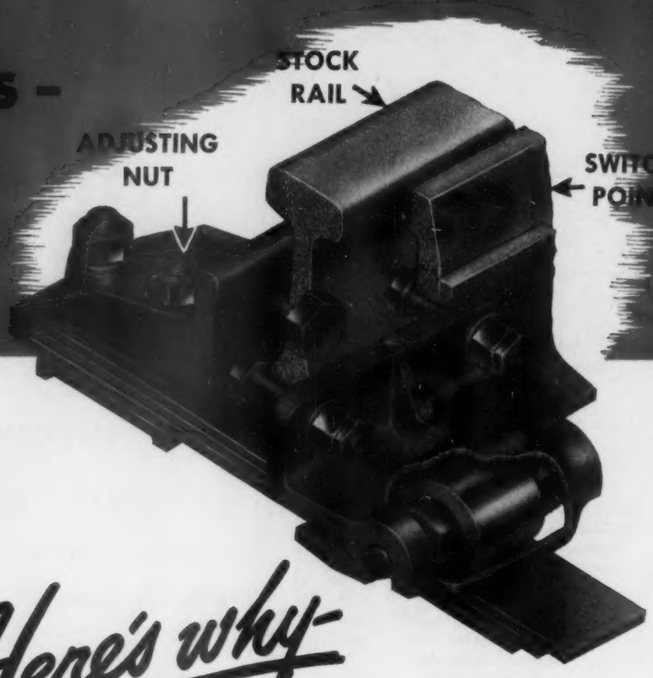
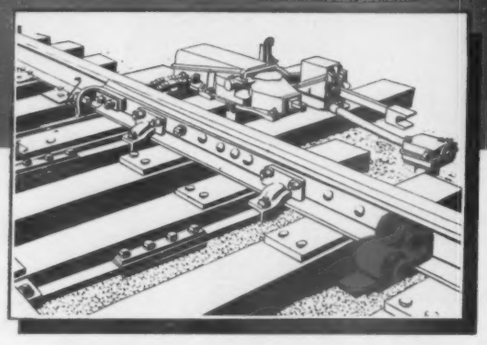
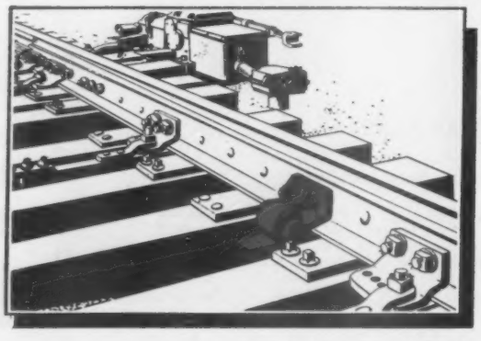
Install "UNION" Roller Bearings On Your Switch Points –

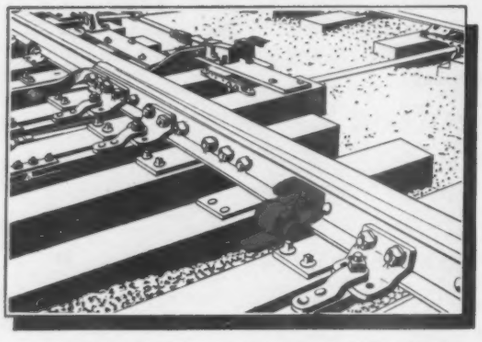




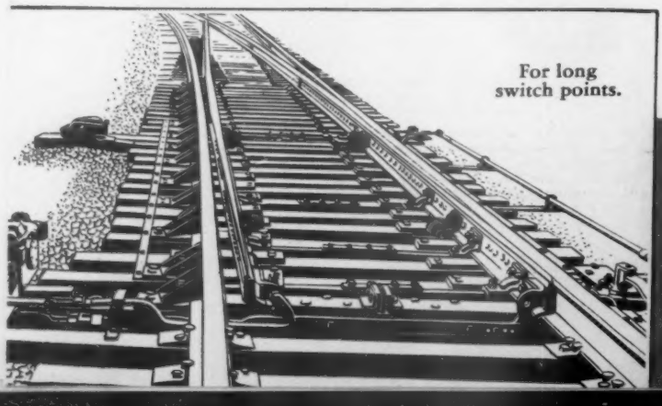
For hand-operated switches, spring switches, and spring switches equipped with mechanical facing point locks.



For power switches.



For switches in mechanical interlockings.



For long switch points.

Here's why–

1. They carry approximately 80 per cent of the weight of the switch points in transit . . . greatly reduce the power required to throw the switch.

2. Save wear on connections and operating mechanism . . . lessen maintenance time required for oiling and cleaning switches.

3. Assure easier operation of long, heavy switch points and minimize frictional interference at locations where sand or dirt collects on the switch plates.

4. Improve operation of spring switches by reducing friction when points return to normal after a trailing move.

5. Aid in restoring spring switch points equipped with Mechanical Facing Point Locks to proper relationship with stock rail—at point where lock connection is made.

"Union" Roller Bearings are attached to the stock rails and support the switch points from these rails . . . function properly despite varying tie alignment. They are mounted above the ballast—and do not interfere with tamping of ties. For full details, call or write our nearest district office.

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SWISSVALE, PENNSYLVANIA

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WEEK AT A GLANCE

STILL FUSSING: One of these days, somebody's going to get the impression that the U.S. Department of Justice doesn't like the Reed-Bulwinkle Act. At any rate, judging from what he told the Interstate Commerce Commission Practitioners at St. Louis last week, the head of that department thinks "serious questions remain to be resolved" as to the scope of that act and as to "interpretation of several of its provisions." A report of the I.C.C.P. meeting —which also included discussions of cost finding in rate cases and of commission administration—appears in the News.

GOOD NEIGHBORS: "The United States and its ways of living and doing business need friends, wherever they may be found, but especially in the Western Hemisphere. . . . One way to secure that relationship is for North American railroad men to utilize every opportunity they can to become acquainted with Latin American railroad men. . . . Close and friendly international relations is not a function which government by itself can perform—without the participation of large numbers of private citizens, which our railroad men and supply men now have the opportunity to provide." Those observations, and others which the editor of this paper brought back from his participation in the recent Pan American Railway Congress Association meeting at Mexico City, are set forth in our leading editorial (page 43). Incidentally, the active part played in that conference by A.A.R. President William T. Faricy is the subject of an enthusiastic and complimentary communication on page 50.

"THE INVESTOR IS VERY DUBIOUS": "The investor point of view, in the aggregate, determines the flow of funds and the cost of financing the growth and changes necessary to keep pace. Sweeping and rapid changes in transportation require huge supplies of capital for plant, equipment and operation." That self-evident, but frequently forgotten, truth was reiterated by Vice-president S. S. Hall, Jr., of the New England Mutual Life Insurance Company in a recent address which is abstracted in this issue (page 53). In it, Mr. Hall summarizes the investor's attitude toward transportation, not only by rail but by highway; and tells in pretty plain language why "the investor is very dubious," and why it is difficult to find new capital for improvements and enlarged capacity.

TWO PROBLEMS: It probably would not be too difficult to obtain pretty general agreement among railroad men, travelers and shippers on the proposition that two of the railroads' most urgent needs are to improve their methods of handling passenger space reservations and l.c.l. freight. Each of those problems is the subject of an illustrated feature article in this issue. One, beginning on page 56, tells how the New York Central has improved its reservation handling by installation of a simplified filing system and revised procedures. The other, on page 58, describes a system of "central checking" for freight at the new Chicago terminal of Mid-States Freight Lines. It's not a railroad operation, of course, but it deals with a problem which railroads, too, have to face. Over and above that, it never hurts to keep an eye on the competition, especially when the competition comes up with what looks like a good idea.

BIG BORE: Not the longest, but certainly one of the biggest railroad tunnels in the world is the outstanding feature of a 5.28-mi. line relocation recently completely by the Norfolk & Western. The new line and tunnel have not only increased operating efficiency and speeded up main-line traffic, but have enabled the N.&W. to discontinue use of electric locomotives and concentrate exclusively on coal-burning steam power, as reported in *Railway Age* when the tunnel was opened last June. Construction of the tunnel —big enough to permit use of large standard earth-moving equipment—is described in the illustrated article which begins on page 46.

HIGHLIGHTS: Week's freight car orders top 3,400 units. —Pennsylvania to re-equip "Congressional" and "Senator" with 66 new passenger cars.—Cecil W. Emken becomes director of I.C.C.'s Bureau of Accounts and Cost Finding. —Missouri Pacific Lines order 124 diesel units.—R. S. Macfarlane to succeed C. E. Denney as president of Northern Pacific at end of year.—Quebec, North Shore & Labrador to use 55 diesels and 100-ton hopper cars to haul iron ore to tidewater, beginning in 1955.—Railroads set new train load and speed records in 1950, Faricy tells annual A.A.R. meeting at New York.—"D.F." box cars in mass production.—Baldwin, Lima-Hamilton consolidation effected. —A.A.R. Car Service Division, in annual report, forecasts orders for an additional 150,000 to 200,000 freight cars by end of 1951 or fall of 1952.

COSTLY SERVICE: Wage cost alone of baggage service in 1949 was more than seven times the total revenue received from that service, according to the latest "Monthly Comment" of the I.C.C.'s Bureau of Transport Economics and Statistics. When other necessary costs of baggage service are considered, the "Comment" says, "losses . . . may well be relatively larger than those resulting from either mail or express service." Other articles in the "Comment," which is reviewed in the News, cover such subjects as railroad financial results for the first nine months of 1950; railroad corporate working capital; increased use of heavy rail; and 1949 intercity passenger traffic.

TURNED DOWN: In a 9-to-1 decision, the I.C.C. has disapproved the Pacific Intermountain Express Company's application to create a 26,000-mi. transcontinental trucking system by acquisition of the bankrupt Keeshin Freight Lines. Possibly more important, in the long run, than the decision itself, is the line of reasoning which the commission majority followed in reaching it. Our News report (page 63) covers both the facts of the case itself and the commission's reasoning in it.

Protection....

Every foot of the way

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Creosoted Products

Protection . . . that's what Amcreco Pressure Creosoting means to you. Protection in the form of safer roadbeds. Cross ties creosoted by the Amcreco Lowry Process last longer too. In fact they even exceed their life expectancy . . . the records prove it.

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LOUISVILLE, KENTUCKY

The A·S·F Ride-Control PACKAGE

Constant, Uniform Friction Control

FOR ORDINARY FREIGHT CAR TRUCKS

● It pays to make *old trucks* modern with self-contained, self-controlled A.S.F. Ride-Control Packages. Long spring travel, plus constant, uniform friction control—*the famous Ride-Control principle*—smooths the ride for lading protection . . . reduces maintenance by shielding cars from track shocks . . . cushions impact at the rails for longer *roadbed* life.

COST-CUTTING, SMOOTH PERFORMANCE

Road tests have *proved* that the Ride-Control Package is "tops" in the package-group class —that performance approaches the *fine riding qualities* of A.S.F. Ride-Control Trucks. The "Package Way" is the economical way to lower-cost operation. Ask your A.S.F. Representative for the figures, the facts . . . *and* case histories.

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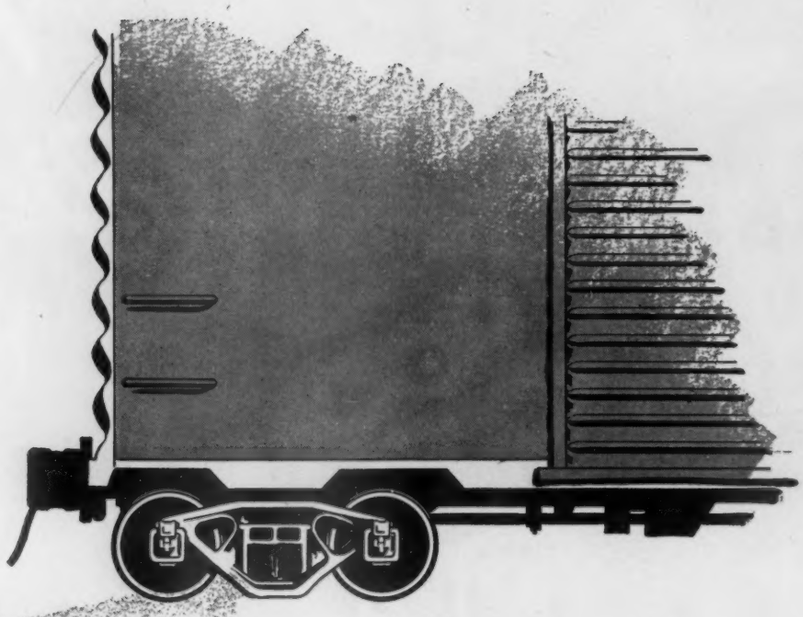

Start here...

to get more pay from your pay-load

Long travel springs made by the Railway Steel-Spring Division cushion the pay-load in your freight car and insure a smooth, even ride. This saves you money as it helps reduce costly damage claims to a minimum.

Long travel springs also allow higher speeds that mean faster service and more profits for you from increased freight traffic. Other advantages include lower maintenance costs and longer life for your rolling stock and roadbed.

These features together with Alco's years of experience in spring design and engineering are your assurance of top performance and efficient service.

Always specify *"Railway" springs.* Call your Alco sales representative in New York, Cleveland, Chicago, St. Louis, St. Paul, San Francisco for more information.

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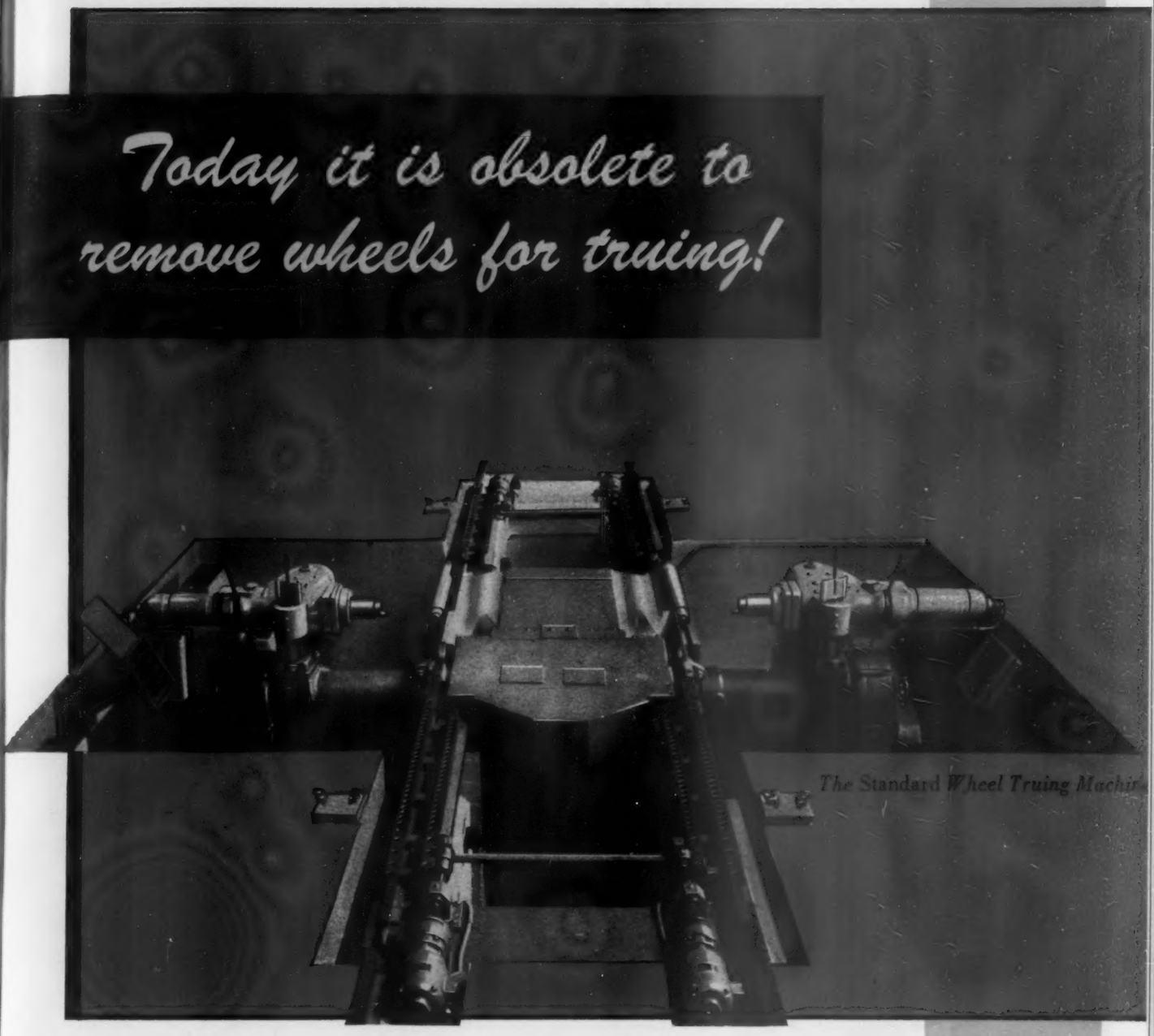
AMERICAN LOCOMOTIVE COMPANY

Today it is obsolete to remove wheels for truing!



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LET us prove our statement—that it is obsolete to remove wheels to restore their contour.

Investigate the tremendous savings in money and out-of-service time.

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Constant rail hp over normal operating range of the locomotive . . . Multiplicity of lightly-loaded driving axles, with maximum locomotive weight used for adhesion . . . Exceptionally high drawbar pull—both for starting and running . . . Increased train tonnage . . . Easier handling of heavier trains . . . Marked reduction of helper service over ruling grades . . . Electric braking on long, descending grades.

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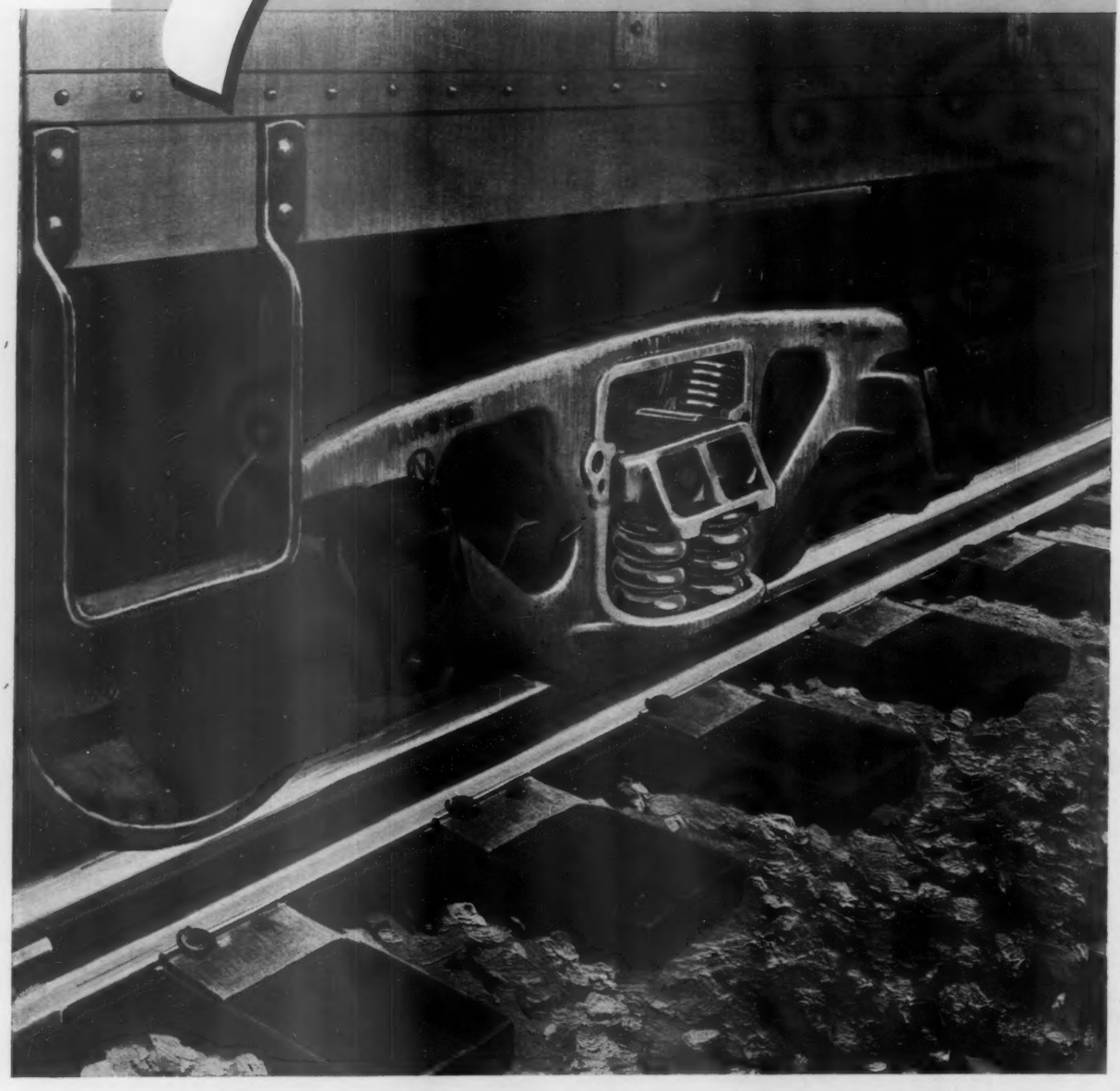

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Smoother Riding

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5. ***FULL BOX-SECTION BOLSTER*** . . . gives maximum strength and rigidity.

6. ***SPRING DEFLECTIONS*** of 2½", 3 1/16", 3 11/16" and 4".

7. ***TRUCK SQUARENESS*** . . . maintained by wedge aligning lugs, integrally cast in the top of each journal box.

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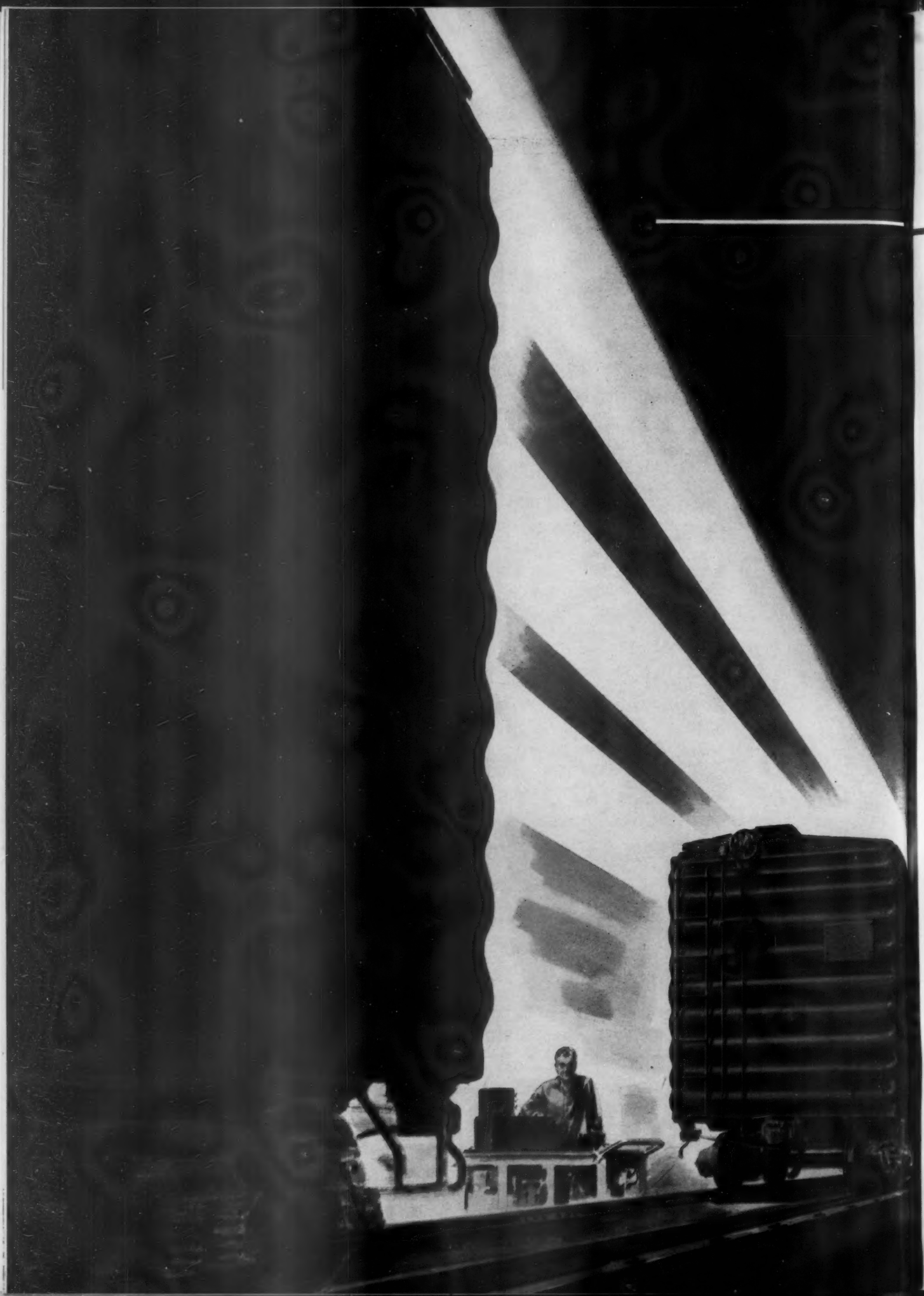

Crack-up!

...TO GET FACTS, NOT THEORIES, ABOUT FREIGHT-CAR STAMINA

Slam box cars together, measure the results of the impact, and you've got a line on the cars' ability to "take it" in actual service. That's the reason for the drastic Pullman-Standard "hump" test.

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That is how technical fact-finding is continually applied by Pullman-Standard, to make the PS-1 end—and the PS-1 *car*—the best we know how to produce.

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CAR MANUFACTURING COMPANY

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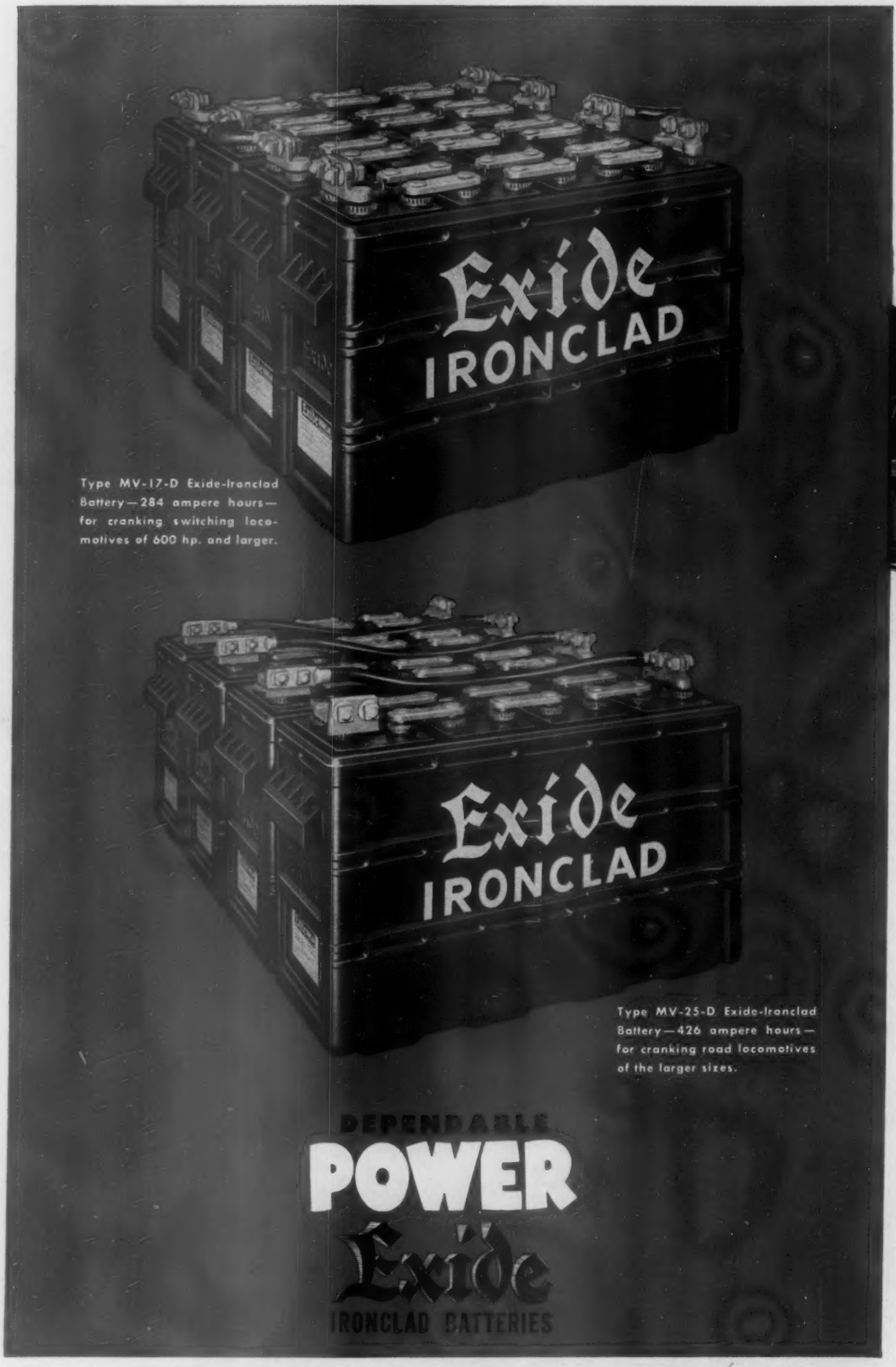

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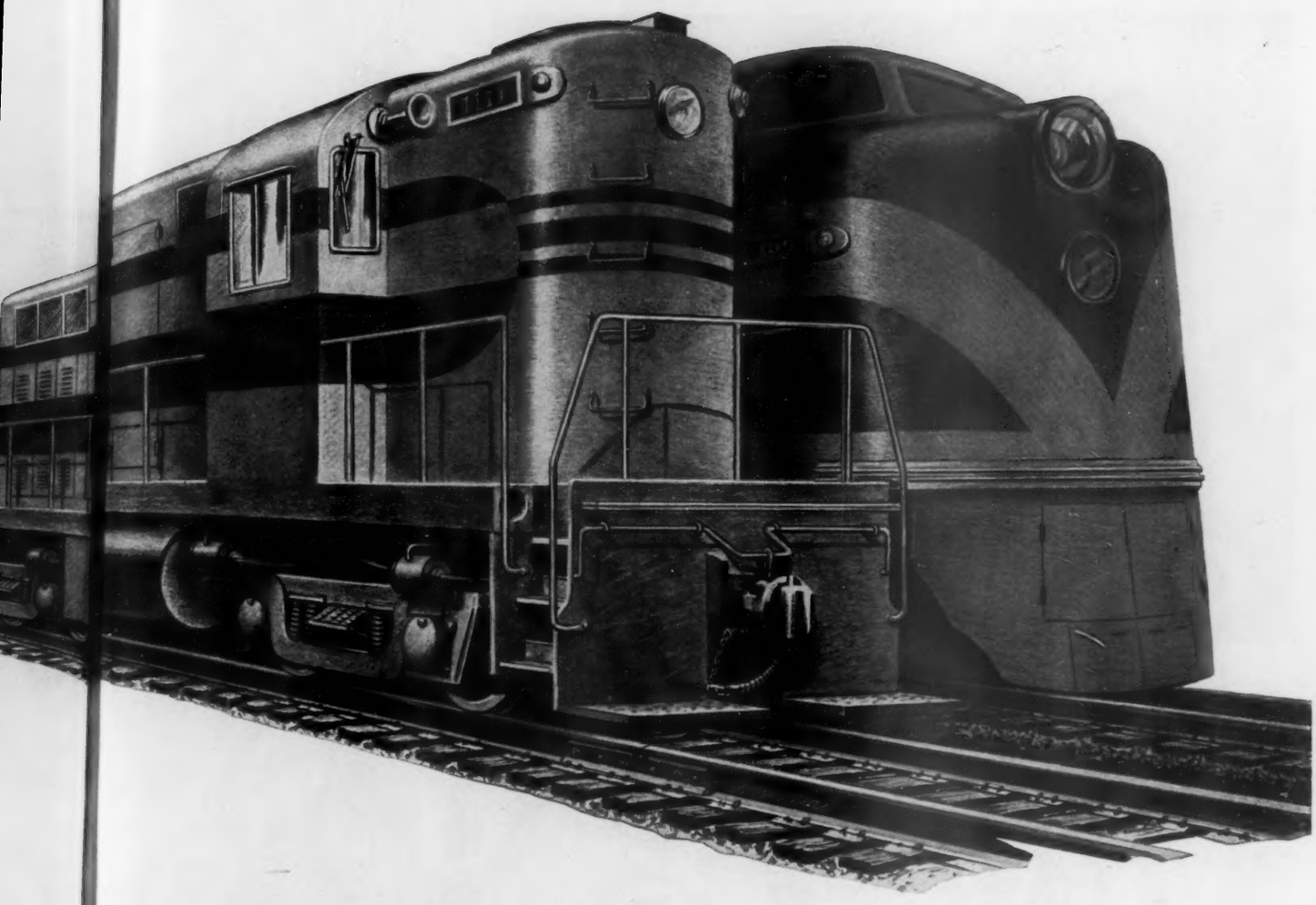

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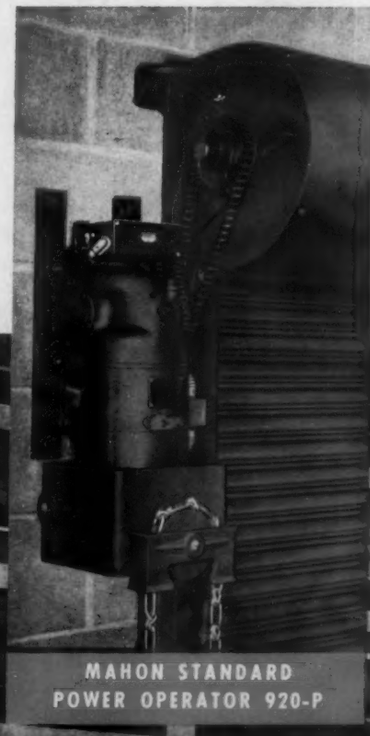
Rolling Steel DOORS

Manually, Mechanically, or Power Operated

Here is a shipping dock application where only a Rolling Steel Door would serve the purpose . . . each door opening is equipped with a hydraulically controlled floor leveling ramp to permit the use of lift trucks for rapid unloading of large trucks and truck trailers. You, too, will find that Rolling Steel Doors offer more desirable operating features than any other type of door . . . Open or closed, they occupy no usable space inside or outside the opening . . . their all-metal construction provides permanence, and a lifetime of continuous, trouble-free service. Comparison will convince you, also, that when you buy Mahon Rolling Steel Doors you can rest assured that you will get the finest materials, finest workmanship, and the latest developments in doors of this type. See Sweet's Files for complete information, or write for Catalog G-50.



MAHON STANDARD POWER OPERATOR 920-P

ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Twelve of thirty-four Power Operated Mahon Rolling Steel Doors installed in a large midwest automobile plant. Note hydraulically operated floor levelers in each door opening.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Western Sales Division, Chicago 4, Illinois

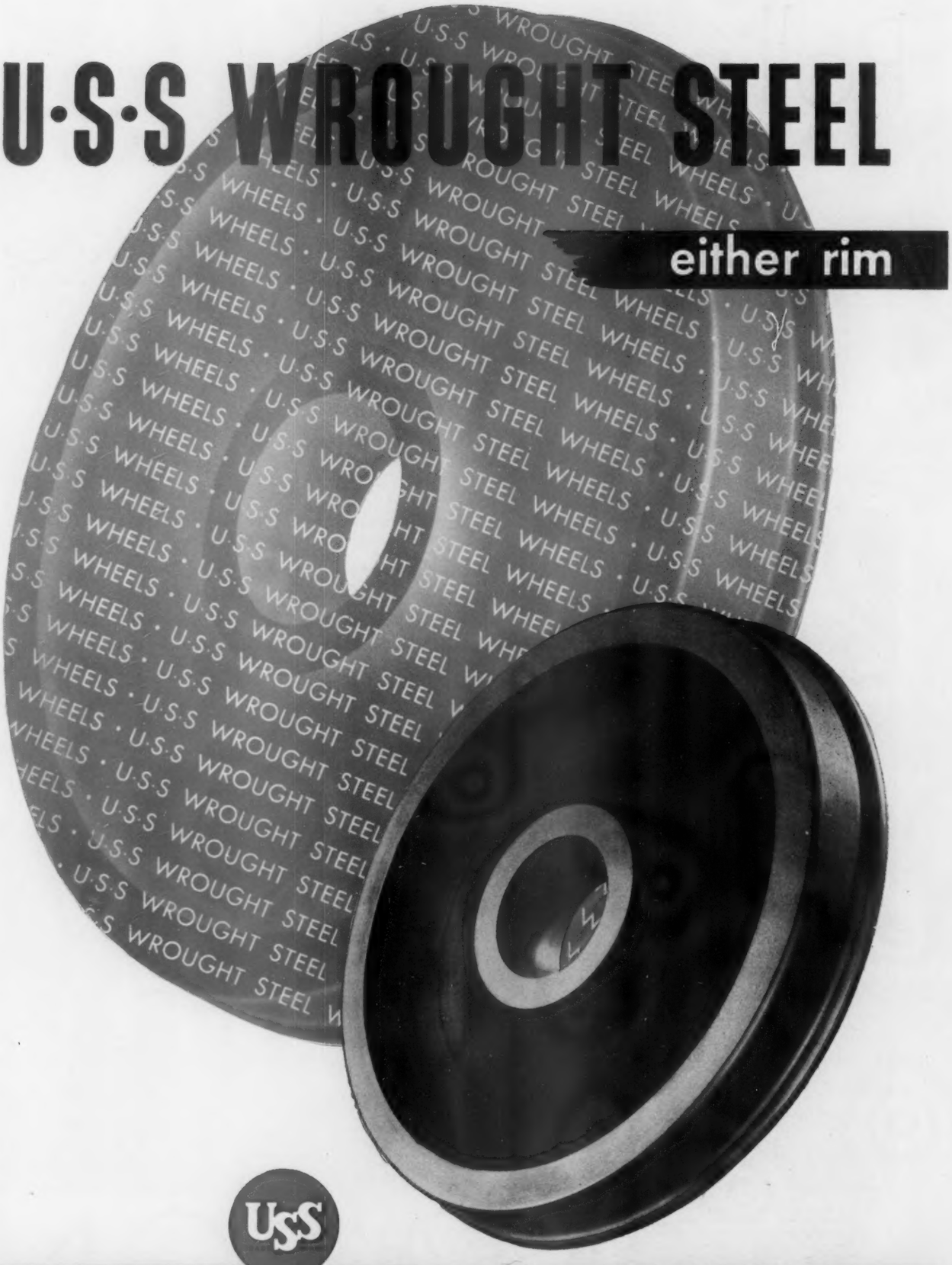
Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls, Steel Deck for Roofs, Partitions, Acoustical Ceilings, and Permanent Concrete Floor Forms.

MAHON

U·S·S WROUGHT STEEL

either rim



USS

UNITED

HIGH DUTY WHEELS

toughened or entirely quenched . . .

Prompt delivery from two strategically-located plants

TO serve you more promptly and efficiently and to give you High Duty wheels for every railroad service . . . either rim toughened or oil quenched . . . we have wheel-making and heat-treating facilities in *two* completely-equipped plants. One at McKees Rocks (Pittsburgh), Pennsylvania, serves the railroads of the East and Southeast. Another at Gary, Indiana, supplies Western and Southern roads.

No other manufacturer of wrought steel wheels can offer you service like this.

In both plants each step in the manufacture of these wheels is carefully controlled from the melting of the steel to the finished product. U·S·S Wrought Steel Wheels are produced from an ingot which is *rolled* into round form before being cut into blocks. This extra rolling operation materially improves the physical properties of the steel, helps to assure better wheel performance.

U. S. Steel subsidiaries were the first producers of rolled steel wheels, and have, over the past 45 years, played a leading part in developing the steel wheel into the greatly improved product it is today . . . a product that will withstand the stresses of heavy wheel loads and high speeds.

Specify U·S·S Wrought Steel High Duty Wheels the next time you order wheels. No finer wheels are available anywhere.

U·S·S WROUGHT STEEL WHEELS

available:

One-Wear Freight Car Wheels
Multiple-Wear Freight Car Wheels
Passenger Car Wheels
Diesel Locomotive Wheels
Steam Locomotive Wheels
Electric Locomotive Wheels
Tender Truck Wheels
Electric Transit Wheels
Crane Track Wheels

CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH · COLUMBIA STEEL COMPANY, SAN FRANCISCO
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

0-1330

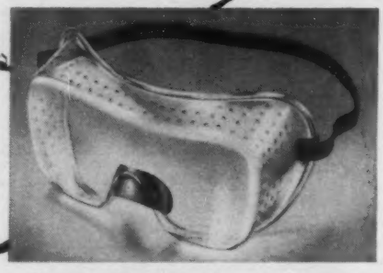
UNITED STATES STEEL

One ounce of protection

AO's NEW INEXPENSIVE ALL PLASTIC GOGGLE

AO One Piece ALL PLASTIC GOGGLE

- LIGHTWEIGHT
- NON-FOGGING
- WELL-VENTILATED
- NON-FLAMMABLE
- WELL-FITTING



Note the many perforations which assure ample ventilation and minimize fogging. Face contacting edges are rolled for greater comfort on this goggle which offers a wide range of vision.

Goggle fits comfortably over most personal glasses with nosepiece hugging nose snugly.

Made of impact resisting plastic, this one-piece goggle (AO479 Clear, AO480 Green) is "optically correct" and meets government specifications. It affords exceptional wide angle vision and can be worn over most standard types of personal glasses and most prescription spectacles and goggles. Recommended for protection against foreign particles striking from any direction on the following types of work: babbiting, chipping, cutting rivets, grinding, hand-tool operations, machine operations, spike driving and similar operations. Your nearest AO Safety Products Representative can supply you.

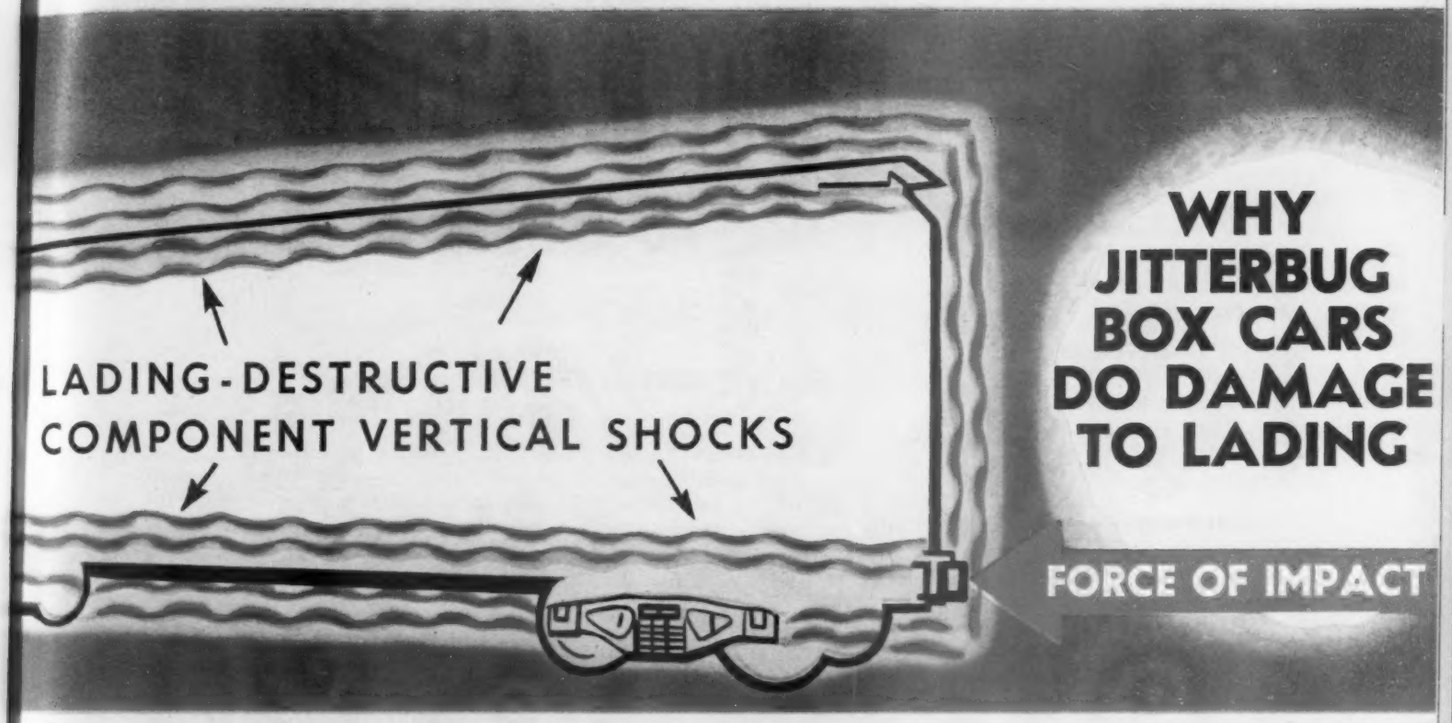
QUICK FACTS
479-480 GOGGLE

- One size only but designed to fit all faces comfortably
- Elastic headband, easily adjusted
- 4 point contact to face of wearer, resists rocking
- Plastic nosepiece fits all noses comfortably and snugly
- Rolled edges for comfort, better fit in contacting face
- Order by number 479 Clear
- Order by number 480 Green

American Optical Company
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

there's a cure for this . . .



WHY JITTERBUG BOX CARS DO DAMAGE TO LADING

On conventional box cars, oversolid longitudinal shocks do enough damage in strain to car structure, but the harm doesn't stop there. As impact bites into a car, it produces both component lateral and highly destructive *vertical* shocks that shake down lading, break open boxes, loosen the dunnage. Here's where Twin Cushions provide extra protection. Having practically no free slack, cushioning in pull and in buff, their double-action takes the bite out of impacts of starting, stopping, changes in running speed, and coupling. In consequence, longitudinal and lateral shocks are minimized, while vertical shocks are *halved* on cars equipped with Waughmat Twin Cushions. Apply Waughmat Twin Cushions on new cars or as replacement to provide modern lading protection.

TYPE WM 4-6
A.A.R.
APPROVED

SAVE MONEY, PREVENT LADING-DAMAGI WITH

WAUGHMAT
Twin Cushions

TRADE MARK REGISTERED

WAUGH EQUIPMENT COMPANY
New York • Chicago • St. Louis • San Francisco
Canadian Waugh Equipment Company
Montreal

*railways are buying**

materials handling

for stations, stores and shops

Railways Need Products Like These for Stations, Stores and Shop Operations

- Fork Trucks *
- Platform Trucks *
- Tractors *
- Trailers ("floats" or live skids) *
- Baggage Trucks *
- Overhead Traveling Cranes *
- Tractor-Mounted Cranes *
- Hoists *
- Permanent and Portable Powered and Gravity Conveyors *
- Elevators *
- Bins, Pallets and Racks *
- Lift Jacks—electric and air motor-operated *
- Industrial Truck Parts and Accessories *
- Storage Batteries *
- Battery Chargers *
- Shipping and Packaging Supplies *
- Steel Strapping *
- Freight Car Bulkheads *
- Special Freight Car flooring, doors and damage-prevention devices *
- Skid Jacks and semi-live skids *
- Communications Equipment *

To save man hours, to save dollars, to *speed* the handling of freight, express, mail and baggage, to *improve service*—that is the competitive aim of the railroads. There has never been a greater opportunity for the railroads to use materials handling equipment.

1. *Stations Department.* The movement of freight through terminals must keep pace with the ability of today's trains to shorten hours on the road. Obsolete station facilities are being modernized wherever possible to take the fullest advantage of mechanical handling.

2. *Stores Department.* Getting material in and out of stores with modern materials handling equipment has resulted in savings of hundreds of thousands of dollars and man hours according to records just reported by fifty railroads. But these roads recognize that the job of modernizing material handling facilities has just started.

3. In the shops and terminals of the *Mechanical Department* the best machine tools can only operate at capacity if the *materials handling equipment* provides equally fast and efficient set-ups and dismountings. Railroads find this is a sure way to reduce costs and increase output.

Why You Should Use Railway Age to Present Efficiencies of Your Materials Handling Equipment

A request for materials handling equipment for the stations department, for example, usually originates with (1) the *station agent.* This is passed along to (2) the *supervising agent;* then to (3) the *division superintendent.* Having gotten this far on the road to approval, the (4) *superintendent of stations* passes on the request and it goes to (5) the *manager of stations.* From there to (6) the *superintendent of transportation,* then to (7) the *general manager,* and finally, for final approval, to (8) the *vice president of operations,* who initials the requisition and passes it on to the *purchasing agent,* who may check with *stores* to see if such equipment is already on hand.

Purchases for *stores* and *mechanical* departments follow a similar routine.

RAILWAY AGE reaches this entire range of executives, department heads, transportation and purchasing officers who buy or influence the buying of your equipment. Final buying decisions are made on every major purchase by top management of railroading. RAILWAY AGE is read by over 90% of the management group which you must reach for favorable consideration and approval.

RAILWAY AGE gets top priority reading by the management group and stands first in industry prestige and influence. It is the railway industry's authoritative weekly magazine. It covers the whole field of important developments while the news is news. It is the only railway business paper that renders this service.

The first issue of RAILWAY AGE each month is devoted to the development of railway freight traffic. These Freight Traffic Issues reach leading industrial traffic managers—a special, extra audience for the railways' own advertising and for manufacturers whose products aid railway freight service.

headquarters for Railway Marketing Information

equipment

WHAT STATION TO MECHANIZE?
Principle of moving largest possible load at one time generally applied to secure greatest cuts in costs
FREIGHT TRAFFIC ISSUE
Power Conveyor at Atlanta Express Terminal Speeds Shipments
Overhead Conveyor Expedites Freighthouse Operations
Freight Terminal Built for Efficiency
FREIGHT PROGRESS—1950
More Gains in Unit-Load Handling Equipment
How the Lackawanna Uses SPECIALIZED HANDLING DEVICES
RAILWAY AGE
Leaders do things First
For Editorial Excellence
INDUSTRIAL PAPERS
1950
AWARD OF MERIT TO
Railway Age
Two Awards
INDUSTRIAL MARKETING

Railway Age Features Materials Handling

Send now for collection of recent articles reprinted in booklet form.

ABP ABC SIMMONS-BOARDMAN PUBLICATIONS
NEW YORK 7—30 CHURCH STREET
CHICAGO 3—79 W. MONROE STREET
CLEVELAND 13—TERMINAL TOWER

Maintenance Records Show Savings Made by PRESSURE GROUTING

AN ANALYSIS of maintenance data on 36 track stabilization projects proves the tremendous money-saving possibilities of portland cement pressure grouting. These projects are located on 12 railroads and total more than 46 miles.

The railroads used two methods of measuring performance. Nine kept records of the man hours of maintenance required on 25 projects. Three kept records of maintenance labor cost on 11 projects. Records ranged from 6 months to 6 years before grouting and from 6 months to 6 years after grouting.

Where man hours was the basis, maintenance dropped from an average of 6,072.8 hours per mile per year before grouting to an average of only 2,043.7 hours per mile per year after grouting. The reduction ranged from 41% to 100% with an average saving of 66% in man hours per mile per year.

Those railroads using a cost basis found that maintenance labor costs dropped from an average of $6,233.16 per mile per year before pressure grouting to an average of only $769.70 per mile per year after pressure grouting. The reduction ranged from 27% to 100% and averaged 88%.

Besides reducing maintenance costs, portland cement pressure grouting increases rail and tie life, saves ballast, speeds traffic by lifting slow orders, allows heavier loads, insures smoother-riding track.

These advantages can be obtained economically because pressure grouting requires only a small labor force and little equipment. And its off-track operations do not delay traffic. More than 55 major railroads now operate over hundreds of miles of pressure grouted track. For more data send for free literature, distributed only in the U.S. and Canada.

PORTLAND CEMENT ASSOCIATION

DEPT. 11c-26, 33 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

Pittsburgh's Alkali and Acid-Resistant CARHIDE...

Provides better protection and longer life for covered hopper cars!

● One of the hundred covered hopper cars refinished with alkali- and acid-resisting CARHIDE in use for more than a year by the Rock Island Lines.

YOU can now give added years of service to covered hopper, refrigerator and tank cars with Pittsburgh's alkali- and acid-resisting CARHIDE.

● **This new product** of Pittsburgh's leadership in paint research now makes possible an entirely new degree of protection against the effects of cargoes which quickly destroy ordinary finishes.

● **A number** of leading railroad lines have tested this finish on several hundred cars for periods from one to three years with highly satisfactory results. Tests have demonstrated that such ladings as soda ash, sulphur, phosphates, cement, lime, common salt, alkalis, crude oil and alcohol will not affect it. Furthermore, it has shown high resistance to abrasion as well as to repeated scrubbings.

● **This new CARHIDE** dries as quickly as lacquer—you can maintain one-day finishing schedules.

● **If your line** has cars used to carry corrosive cargoes it will pay you to investigate this new alkali- and acid-resistant CARHIDE. Call on us for suggestions and advisory service.

PITTSBURGH PLATE GLASS COMPANY
Industrial Paint Division, Pittsburgh, Pa.

Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Division, Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Div., Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

Pittsburgh Railway Finishes For Every Need

CARHIDE—for wood and metal freight cars of all types.

LAVAX SYNTHETIC ENAMELS—for locomotive and passenger cars.

STATIONHIDE—adds beauty and attractiveness to stations.

IRONHIDE—for iron and steel fixed properties.

SNOLITE—white fume-proof paint for signs, crossing gates, fences and cattle guards.

PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

ECONOMY SAYS:

"Go all the way with 'Cat' Diesel off-track power"

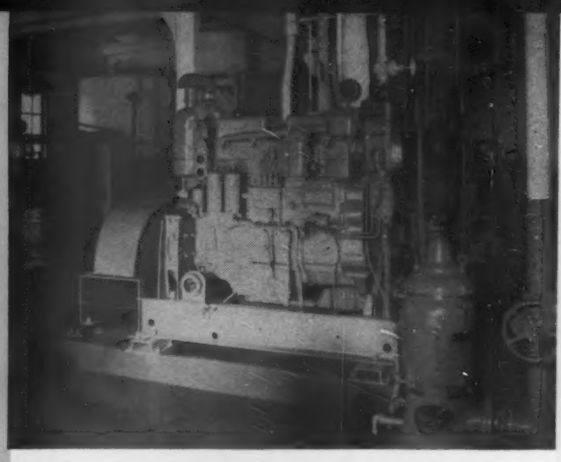
YES, economy expresses itself *emphatically* when full advantage is taken of the many uses for "Caterpillar" Diesel Engines and Electric Sets. Emphatically in the savings that accrue from extremely low fuel and other operating costs. Emphatically in the low maintenance cost of these time-proved power units. Emphatically in the simplification of parts and service through standardization.*

* *Standardizing on "Caterpillar" Diesels in powered off-track equipment as well as in rail cars and locomotives brings parts and service under the responsibility of one manufacturer and one widespread and thoroughly equipped dealer organization. It unties railroad funds from parts stores and puts complete parts facilities as near as your telephone.*

CATERPILLAR, PEORIA, ILLINOIS

REG. U.S. PAT. OFF.

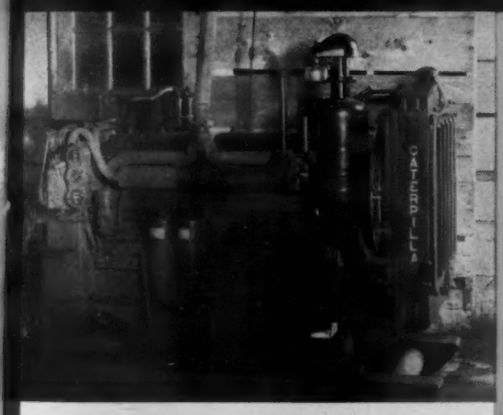
TUG. Many railroad-owned boats handling car ferries and barges are "Caterpillar" Diesel powered. This one, using a "Cat" D13000, does a big day's work for the Western Maryland Railroad.



REFRIGERATION. These three "Caterpillar" Diesels produce 40 tons of ice daily for refrigerator cars passing through the T. P. & W. Railroad yards. They operate 24 hrs. per day in summer; 16 hrs. in winter.

CRANE. This "Cat"-powered crane can pick up 12 tons with hook or sling; four tons with 36-in. magnet. A work-speeder and cost-saver on the Great Northern Railway!

CRIBBER. "Caterpillar" power versatility is demonstrated in this modern track maintenance machine—a cribber with a high daily work output in service on an Eastern railroad.



LIGHT AND POWER are generated by two "Cat" Diesel Electric Sets for a host of rail and water transportation facilities—railroad station, boat shed, boat repair shop, coal chute and station agent's house at Ontario, Canada.

GRAVEL PLANT. Every railroad needs plenty of gravel, sand and ballast rock. Power takes a beating wherever they are produced. But "Cat" Diesels never flinch! Seals and filters keep ruinous grit out of their insides.

COMPRESSOR. Track relocations and extensions, building sites and other tough excavation projects call for tough equipment. This "Cat"-powered compressor drives a wagon drill and two jackhammers. Location, California.

* * *

"Cat" power is available in equipment built by leading manufacturers.

LOOK UNDER THE HIDE

"Caterpillar" intake and exhaust valves are made of highly alloyed, heat-resistant steels. Their ample size, close machining and heat-treat specifications have resulted in thousands of hours of trouble-free valve operation. Valve and rocker arm design are matched to reduce wear. Look under the hide for quality. It doesn't show on the outside—it shows up in performance.

CATERPILLAR

REG. U.S. PAT. OFF.

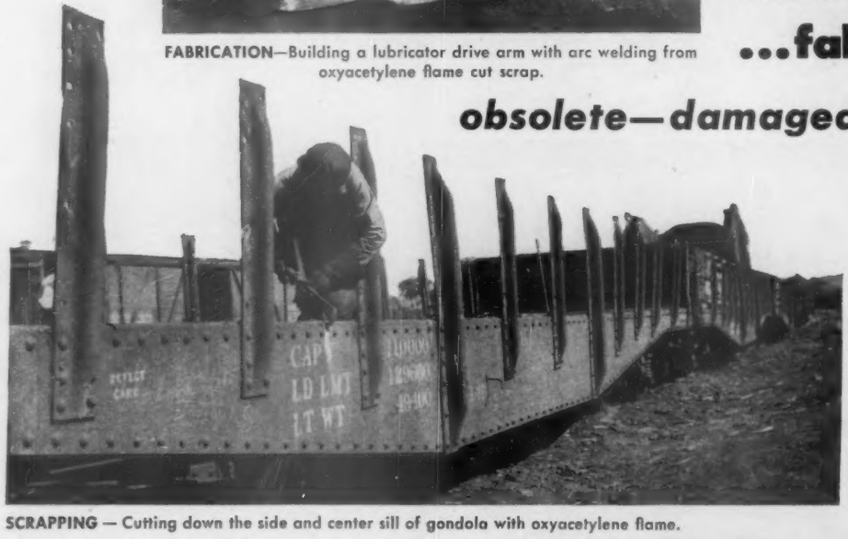
DIESEL ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

FABRICATION—Building a lubricator drive arm with arc welding from oxyacetylene flame cut scrap.

3 ways to increase revenue

...scrap
...reclaim
...fabricate

obsolete—damaged steel equipment



SCRAPPING — Cutting down the side and center sill of gondola with oxyacetylene flame.

Get the most revenue from your old steel. Cut it into salable shape . . . reclaim it . . . or fabricate it into new parts with Airco oxyacetylene flame and electric arc processes and equipment . . . do the job faster — at less cost.

Oxyacetylene flame cutting has made the scrapping of box cars, gondolas, locomotives, and other equipment a highly profitable procedure for railroads today.

Further, coupled with its companion process — the electric arc — it is a real money saver for reclaiming such items as brake heads, superheater units and driving wheels from old or damaged equipment . . . and, also, for quickly fabricating from scrap: road signs, coupler raisers, fence posts, and a variety of other parts.

Call in an Airco Railroad Representative. He'll be glad to advise you on the most efficient application of the oxyacetylene flame and electric arc as it affects your problem. His long experience helping other roads, plus the wealth of practical knowledge he has for most efficient use of the oxyacetylene flame and electric arc, will more than help *you* get top revenue from your scrapping and reclamation operations. Write or phone your nearest Airco office today.

RECLAMATION—Damaged coupler reclaimed by arc (or oxyacetylene) welding.

Costs Come Down Under The Airco Plan

AIRCO **AIR REDUCTION**

Offices in Principal Cities

Headquarters for Oxygen, Acetylene and Other Gases...Calcium Carbide...Gas Cutting Machines...Gas Welding and Cutting Apparatus, and Supplies...Arc Welders, Electrodes and Accessories

Designed to utilize high strength low alloy steel containing nickel, the body of this car provides minimum weight without sacrificing strength or safety.

High strength low alloy steels containing *Nickel*

Reduce Bulk and Deadweight

of air-conditioned commutation cars . . .

Carefully look at rolling stock designed to take full advantage of high strength low alloy steels containing nickel.

This type of steel permits the builder to strengthen fabricated structures, and to reduce bulk and deadweight, because thin light sections of these steels provide the same strength and ruggedness as thicker, heavier sections of plain carbon steel.

In addition, by resisting impact, wear, abrasion and corrosion, the nickel alloy steels substantially lengthen equipment life. Moreover, they can be fabricated as easily as carbon steel, and often decrease unit-labor costs.

In the commutation car, shown above . . . one of the first electric-powered, self-propelled cars produced by the St. Louis Car Company on a 100-car order for the New York Central System . . . nickel-containing alloys play a vital role.

All bodies are of high strength low alloy steels containing nickel. Truck frames are cast in 2% nickel steel, and the "tightlock" couplers are also cast in nickel steel. Roller bearings, furnished by Timken, SKF, Hyatt, and Fafnir, also utilize nickel alloyed steels. Door handles and coat hangers are of nickel silver, and chromium-nickel stainless steel is widely used throughout the interiors.

Nickel-containing alloys may help save money *day-after-day* by reducing bulk and deadweight. They help cut maintenance costs by minimizing wear and corrosion. Consult us on their use in your equipment.

Applications of austenitic chromium-nickel stainless steels include moldings, seat edging and arms, electric heater guards, and toilet floor plates. Each car, built to provide new conveniences for 130 passengers seated on one level, uses a 48-cell Edison "A4HW" nickel-iron-alkaline storage battery.

* * *

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N. Y.

The NEW HAVEN receives...

its First Order

of LIMA-HAMILTON SWITCHERS

The New York, New Haven and Hartford is currently receiving its first order of Lima-Hamilton diesel electrics—10 locomotives, each 1200 hp. These units will be placed in service at the Maybrook yards.

LIMA HAMILTON CORPORATION

LIMA-HAMILTON CORPORATION **LIMA, OHIO**

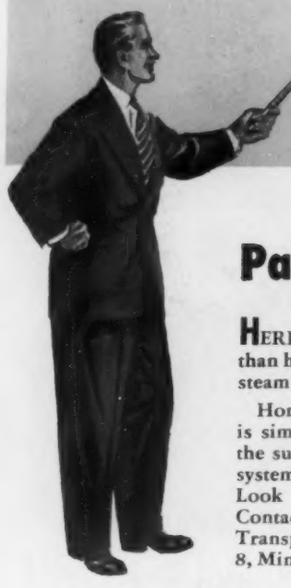
Lima Locomotive Works Division

HONEYWELL'S

New Economy Car Heating System

With Electronic Moduflow

Costs Less!



Pays for itself...

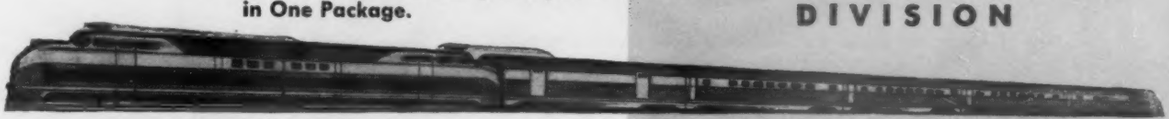
HERE'S a complete car heating system that actually costs less than half the initial cost of an ordinary system and makes possible steam savings as high as 40%.

Honeywell's new system has fewer components. Installation is simple. Less maintenance is required. And passengers enjoy the superior comfort of Electronic Moduflow. No other heating system offers so many advantages—such economy of operation. Look into this Economy Car Heating System, without delay. Contact your nearby Honeywell field representative, or write: Transportation Division, Minneapolis-Honeywell, Minneapolis 8, Minnesota. In Canada: Toronto 17, Ontario.

Check these features ✓

Much lower first cost, $888 F.O.B. Minneapolis
Savings in steam up to 40%
Simplified installation
Just one reducing valve
Just one operating heat valve
Less undercar piping
Simple control panel
Super-sensitive electronic thermostats
Accurate temperature control
Automatic changeover from heat to cooling
Modulation for comfort
Less maintenance

The Ideal Combination of Quality, Simplicity and Economy Complete in One Package.



MINNEAPOLIS
Honeywell
TRANSPORTATION DIVISION

Serving the Railroad Industry

Dependable Controls Cost Less Than Service

Simtex Table Napery

plays a leading role

in the meals that

guests remember!

SIMTEX MILLS, 40 WORTH STREET, NEW YORK 13, NEW YORK.

DIVISION OF SIMMONS COMPANY, MAKERS OF THE FAMOUS BEAUTYREST MATTRESS

STANDARD HD
TRADE MARK
Diesel Oil

...on more than 60 U.S. railroads

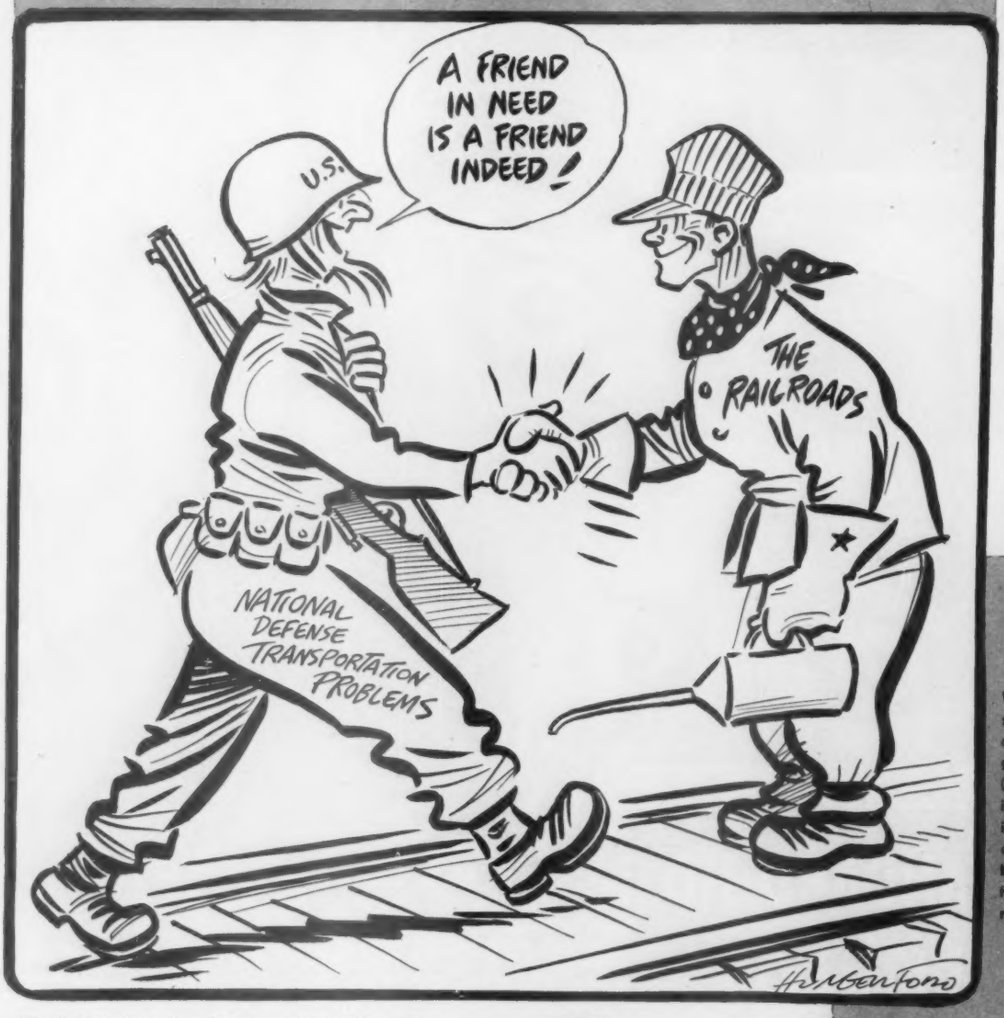
Wide acceptance of STANDARD HD by railway diesel operators is one proof of the ability of this superior diesel-engine lubricant to reduce costs and maintenance. Test runs on line after line led to adoption of STANDARD HD for all types of service—heavy freight haulage, fast passenger runs, or switching. All makes and models of diesel engines are successfully lubricated with STANDARD HD.

You will get the greatest possible engine cleanliness and economy by the exclusive use of STANDARD HD on diesel equipment.

You can count on STANDARD HD to help you keep diesel-engine maintenance and operating costs low. Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA) STANDARD

Old Pals —By Hungerford

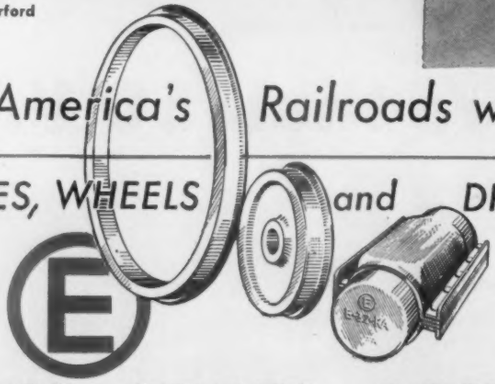


We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, at cost.

Watch for other railroad cartoons by Mr. Hungerford

Serving America's Railroads with

ROLLED STEEL TIRES, WHEELS and DRAFT GEARS



EDGEWATER STEEL COMPANY

P. O. BOX 478 · PITTSBURGH 30, PA.

Extra service, extra reserve capacity is built into Gould "Z" Plate Car Lighting and Air Conditioning Batteries! 96% of the "Z" Plate's working surface is *regenerative* power-producing material. The grid itself is 66% more resistant to deterioration. Grid porosity has been reduced 85%. Cars are more available . . . there are fewer car lighting and air conditioning failures . . . battery maintenance is lowest when you choose

GOULD "Z" PLATE BATTERIES

America's Finest Car Lighting and Air Conditioning Batteries!

CHIEF CAR INSPECTOR:
"Our cars are more available for train make-up since we switched to Gould!"

ELECTRICAL YARD FOREMAN:
"Require less yard charging—they maintain capacity longer after charging."

Nothing Beats GOULD-EQUIPPED CARS!

ELECTRICAL ENGINEER:
"Gould's 'Z' Plate design increases battery life...gives us lowest monthly cost based on service life."

ELECTRICIAN:
"There's less cleaning, less corrosion with Gould's lead insert covers."

MASTER MECHANIC:
"Gould's periodic inspection service and technical battery assistance help us keep our battery maintenance costs low."

GOULD

STORAGE BATTERIES

GOULD-NATIONAL BATTERIES, INC.*

TRENTON 7, NEW JERSEY

Always Use Gould-National Automobile and Truck Batteries

*Formerly Gould Storage Battery Corporation

TREE FARMS plus MILL GROUPS like this, mean Continuous Production

TO HELP INSURE A PERMANENT INDUSTRY WE—

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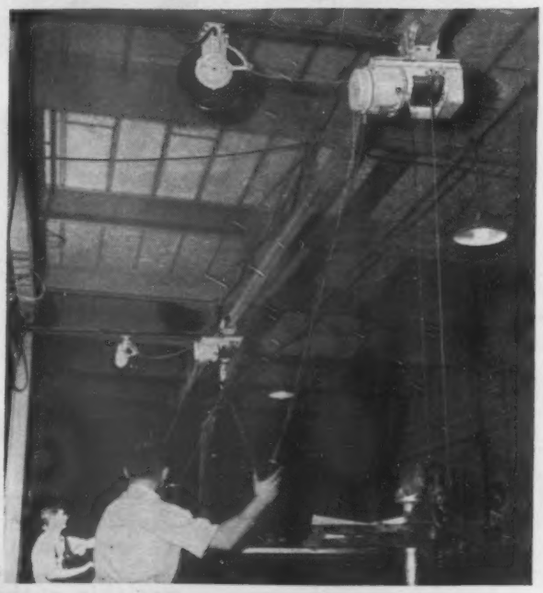

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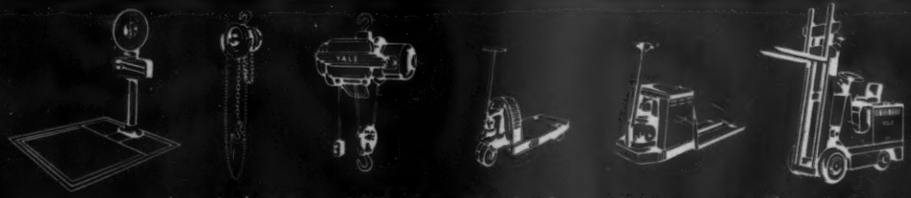

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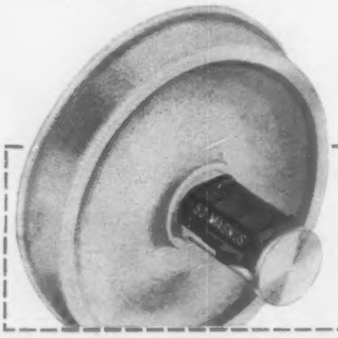

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RAILWAY AGE

EDITORIAL COMMENT

CLOSER RELATIONS WITH LATIN AMERICAN RAILROADERS

During the middle of last month the presidents of the Association of American Railroads and the American Short Line Railroad Association, along with several other men from the railroad industry and allied fields, put in a couple of weeks in Mexico City as the first United States government representatives to participate as full-fledged members in a meeting of the Pan American Railway Congress Association. As was reported briefly in the October 28 issue of this paper, the Congress has been invited to hold its next meeting in the United States, and has accepted the invitation. The railroad industry has, thus, taken an important and effective step in furtherance of the government's "good neighbor" policy toward the Latin-American nations. It is an activity which, in the long run, could, if actively and intelligently pursued, bring considerable benefit to the domestic railroads and the supply industry, as well as to the nation as a whole.

Some may suspect that what is afoot here might be more of the so-called "global boon-doggling" of which persons in charge of the nation's foreign policy have frequently been accused—not always without rather plausible supporting evidence. The best answer to that suspicion is to ask those to whom it might occur whether they could possibly suspect such practical and experienced railroad leaders as Messrs. Faricy or Hood of "falling for" a boon-doggling project? Of course, nothing of the kind is involved.

How to Make Friends

The simple fact is that—quite apart from considerations of partisan politics—the United States and its ways of living and doing business need friends, wherever they may be found, but especially in the Western Hemisphere. Nations do not become friendly just by not fighting, or by an exchange of visits by heads of governments. Effective friendship between nations comes into active being only when business, professional and other groups of specialists become well acquainted with people of the same interests in other countries. The pattern has been fully and familiarly demonstrated in the relations between this country and Canada, and between all of North America and Great Britain.

Railroading on this continent is both a business and a profession. In most other countries it is a profession

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only and not a business—since most railroads outside North America are government-owned. But railroad men can benefit by acquaintance with railroad men in other countries—regardless of who owns the railroads. The technical, operating, personnel, traffic and competitive problems are similar in kind from country to country—whether ownership is private or public. It might well be that railroad men in North America could expect to pick up relatively few new technological ideas from their parallel numbers on the railroads south of the border—for the primary reason that the Latin-American countries have little in the way of a supply manufacturing industry. On the other hand, from the very fact that the railways of most of those countries are government-owned and that most of them are short of transport facilities of all kinds, it might easily be that they could tell us a lot that we do not know, or do not practice, for example, in getting some order into transport competition.

But real friends are not made on a basis of strictly even barter—and progress in getting railroad men from the two Americas better acquainted with each other does not depend on establishing, first, an even balance of advantage to be gained from such association. Friendship is a relationship based on some feeling of mutual interest and sympathy—which it is easy for most railroad men to find in each other. Difference in language is a handicap, to be sure, but it is not an insurmountable one—as the dozen or so American railroad men in attendance at the recent Mexico City meeting can testify, particularly with the skilled service which trained conference interpreters provide.

As the chairman of the American delegation, Mr. Faricy labored skilfully and indefatigably to extend and deepen his acquaintance with the Latin-American delegates—and in this effort he was ably supported by Mr. Hood and the other representatives of the railroads and supply companies in attendance, as well as by Professor George Baker of Harvard University and Arlon Lyon, executive secretary of the Railway Labor Executives Association (these last named also being members of the official U. S. delegation).

Only Private Citizens . . .

In sum, this nation needs the friendship and confidence of Latin America, and one way to secure that relationship is for North American railroad men to utilize every opportunity they can to become acquainted with Latin American railroad men, and to meet them at least half way in the interchange of information on questions of mutual professional interest. This is a task in the realm of diplomacy—but it is one which only private citizens can effectively perform, especially since in North America the operation of railroads is a private rather than a governmental function.

The Pan American Railway Congress provides a convenient vehicle for bringing railroad men of the Western Hemisphere together; and both the Association of American Railroads and the Short Line Association are cooperating toward the desired goal through the participation of Messrs. Faricy and Hood. These men cannot, of course, carry the burden alone; and the ultimate success of the undertaking will be largely gaged by the degree of enthusiasm which our government and individual railroad and supply men bring to the planning of the next meeting of the Congress, scheduled to be held in Washington and Atlantic City in 1953.

In the American republics, close and friendly international relations is not a function which government by itself can perform—without the participation of large numbers of private citizens, which our railroad men and supply men now have the opportunity to provide. From what this paper has seen of these Latin American railroaders, the assignment must be classified as a pleasure rather than a chore—and, when it comes to hospitality, we are probably not capable of anything to surpass that which our Latin American friends have already extended to the "visiting firemen" from the North. A slight exposure to these Latins is all the average railroader is likely to need by way of an incentive to transform himself into an ardent protagonist of intrahemispheric collaboration.

Finally, the acceptance of responsibility by the railroad industry for carrying out an effective program in furtherance of national policy in this important area could scarcely fail to bring a favorable reaction in official Washington, where greater understanding and appreciation of the importance of the domestic railroads and the abilities of the industry's leaders would certainly do the railroad business no harm.

A PROVED, BUT LITTLE USED, WAY TO SAVE A LOT OF MONEY

One of the unfortunate side results of the diesel revolution that has been and is taking place on the nation's railroads is the nearly complete lack of interest in the steam locomotives that are left. This practice can be rationalized in several ways, all but one of which are at least partially understandable. It can be understood, for example, how a line in the midst of a rapid changeover to a new and decidedly more complicated form of motive power will have little time left to study original projects to improve steam maintenance or operation. It is likewise understandable that a line just running out the mileage in steam locomotives will gain little benefit from changing any steam practices, and the same can be said for roads that have but a few steam locomotives for peak loads or other types of service in which little mileage can be made.

Subtract the steam locomotives that come under the above classifications and there is still a lot of this power left. A big proportion of these locomotives are turning in enough mileage, and will turn in enough for at least

several more years, to make their operating and maintenance cost a substantial item. Why advantage is not taken of proved methods of reducing costs and increasing availability on this group of steam locomotives is a puzzle, particularly when the development work on a method to accomplish both these objectives has already been done and nothing remains except to put it into practice.

A particularly good example of a procedure that would greatly improve steam operation with little time or effort required for its adoption is the transit method of layout. The development work has already been done by the Chicago & North Western. All that need be done to take advantage of the excellent results that can be obtained is a few hours study on how the layout is done and a little initiative to put the method into practice.

Results on the North Western certainly prove that these few hours would be profitably spent. The first two 4-8-4 locomotives laid out with the transit have completed their fourth annual inspection after covering nearly 400,000 miles each. During this period classified repairs were neither given nor required; the machinery is still in excellent condition and suitable for at least one more year of service. No cylinder boring has been necessary, original shoes and wedges are still used, as are most floating plates, crank pins, etc.

The above is but a brief resume of what the transit method has done on one class of locomotives, but it should be sufficient to indicate its value. Its adoption does not require any extensive machinery or plant revision; all that it does need is a transit and a reasonably intelligent man to follow a procedure already developed and proved.

FOR THE BEST SUBURBAN GROSS

The problem of making short-haul commutation and suburban passenger business self-supporting may be insurmountable. There are, however, steps which may be taken to minimize the losses which these operations entail.

The rush-hour commuters are the ones who make this service costly. They require large quantities of service in short spaces of time, and, therefore, set the minimum requirements for equipment, facilities and personnel. It is their demand which determines the cost. Yet the commuters are offered the lowest and most attractive fares—while the mid-day passenger, who gets only a by-product service, is usually required to pay a much higher rate.

The off-peak rider—the shopper and other occasional rider—usually costs the railroad little more to haul than the fuel which is required to operate the off-peak trains. These trains may be operated to provide a public service (a form of philanthropy); to take care of head-end business; or to comply with requirements of regulatory bodies.

They are usually operated with layover crews, and always with equipment, and upon facilities, which would otherwise be idle between peaks. It is the complete antithesis of customary price-making practice in other industry that such passengers should be charged higher fares than those levied for rush-hour travel.

As an example, on one eastern suburban line—on which frequent service is operated throughout the day—the following fares apply to a station, picked at random, 12 miles from the city terminal, and are typical of those offered to many similar stations:

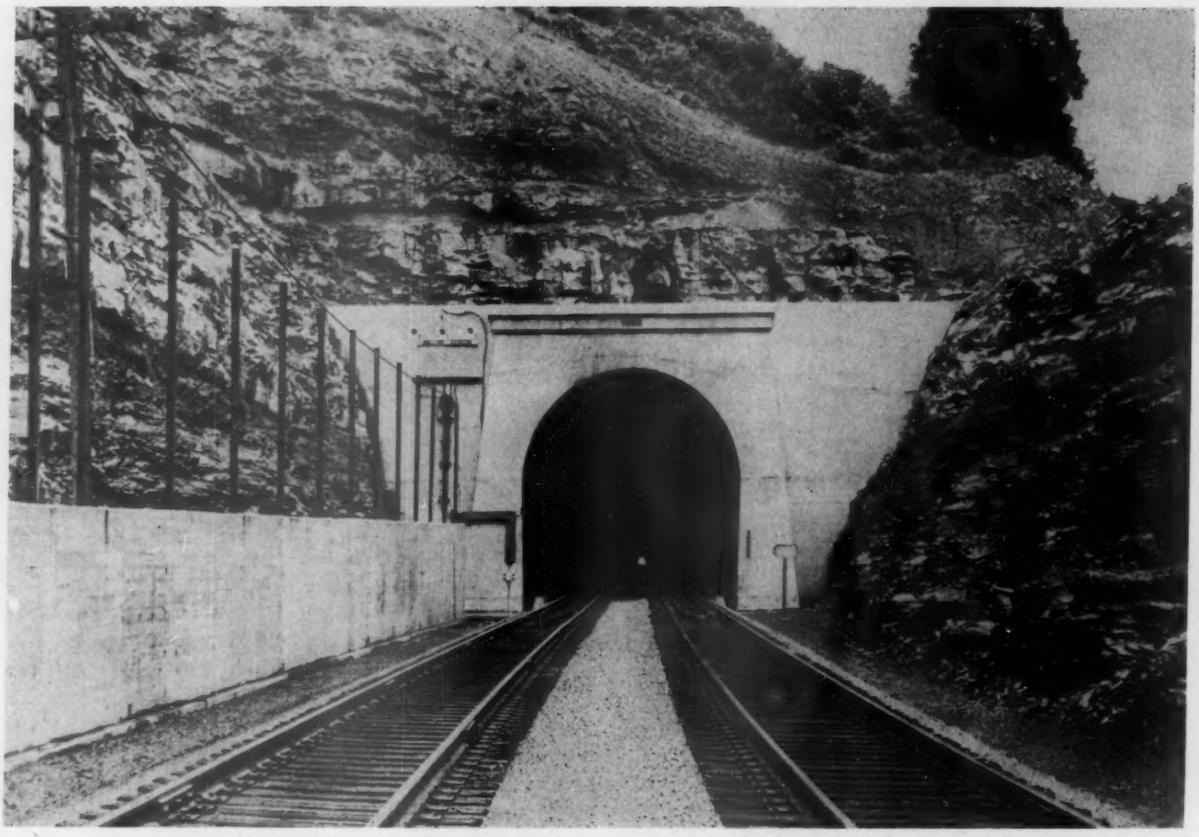
Rate Per Round-Trip (including federal tax where applicable)	
Unrestricted	94 cents
One-day (not valid on rush-hour trains)	74 "
Ten-trip ticket (six-month limit)	74 "
Twenty-trip ticket (two month limit)	63.6 "
Weekly ticket (based on ten rides a week)	64 "
Monthly ticket (based on 46 rides a month)	55 "
Restricted monthly (not valid on Sat. or Sun., based on 46 rides a month)	49.6 "

The regular rush-hour commuter—the one who sets the high cost of the service—can make his round trip for as little as 49.6 cents. For this he gets a faster, more comfortable ride than if he used the local transit service which is available, in this particular area, at 26 cents a round trip. The hopper, or occasional rider, using the off-peak service, cannot make a round-trip for less than 74 cents, unless he, or, more often, she, can make a $6.35 investment in a 20-trip ticket, and use it up within two months. But on the local transit line she need pay only 26 cents, and, in addition, has added frequency, corner stops and downtown transfer privileges. So, for a round-trip, the railroad asks a 48-cent premium—nearly 200 per cent.

As a result the railroad's off-peak service goes begging. Since the railroad can save little actual cash by discontinuing this off-peak service, or may be forced to run it anyway, the loss in off-peak revenue only helps increase the total loss from the service.

In many cases the off-peak price differential is aggravated by the federal tax, which commuters do not have to pay. If, in the case cited, the railroad offered an off-peak round trip ticket at 35 cents, which would avoid the tax, in place of the existing 74 cent ticket—of which only 64 cents is railroad revenue and 10 cents is tax, it would be necessary to increase off-peak volume only 82 per cent, or less than double, to produce revenue equal to that now received. This 53 per cent reduction from 74 cents to 35 cents for the round trip—only nine cents over the transit fare—might well cause the off-peak volume, which is now very small indeed, to more than double, in which case the railroad would be ahead in net.

While there seems to be a good case for granting these riders a much reduced rate to build a maximum gross without affecting expenses, there is no argument whatever against the desirability of obtaining still higher, and more nearly remunerative, fares from the costly rush-hour commuter for whom the maximum plant must be maintained.



Said to be one of the largest bores of its type in the world, the new double-track tunnel permits the Norfolk & Western to discontinue the use of its electric locomotives and to use coal-burning steam locomotives exclusively. Because of the stratified nature of the rock, a slide-detector fence was constructed at one side of this portal

Large N. & W.

Reaffirming its faith in the modern coal-burning steam locomotive, the Norfolk & Western has spent nearly two and one-half years and $12 million on a line-relocation project, recently completed, that will considerably increase the road's operating efficiency and speed up traffic over its main line. The outstanding element of this project is a new double-track tunnel, 7,110 ft. long, which is one of the largest bores of its type in the world. The construction of this tunnel permits the road to discontinue the use of its electric locomotives and to use coal-burning steam locomotives exclusively. (See *Railway Age* of July 1, page 77, and July 22, page 45.)

In addition to the construction of the tunnel, the project involved the relocation and building of 5.28 miles of double-track line; the erection of a new steel bridge 514 ft. long over a creek and highway, and a 24-ft. by 14½-ft. by 200-ft. concrete underpass for a highway, with a triple box culvert under the floor; the reconstruction of a viaduct 682 ft. long; the installation of automatic signals; the reduction of grades and curves; and the shortening of the line 0.36 mile. Five box culverts, ranging in size from a double 12-ft. by 12-ft. structure to a 6-ft. by 6-ft. box, were also constructed.

The line improvement, involving one of the busiest districts of the road's main line, extends westerly from the west portal of an existing double-track tunnel. The old line was double track except where it passed through a single-track tunnel 3,014 ft. long. The former line ascended westerly from the existing double-track tunnel on a 1.1-per cent grade to the summit near the restrictive tunnel, and ascended easterly from the other end of the project on grades as steep as 2 per cent. On the relocated line the maximum grade ascending westerly is 0.5 per cent, while the maximum grade against eastbound traffic is 1.4 per cent, compensated for curvature. The grade in the tunnel is 1 per cent ascending easterly to the new summit 1,400 ft. east of the tunnel and 63 ft. below the old summit. The old route also involved a number of curves as high as 13 deg., whereas the curves on the new line do not exceed 4 deg. 30 min.

Old Tunnel Too Small

The old single-track tunnel was drilled through a rich coal seam, 10 ft. thick, in 1887-1888—a period when the fast-expanding railroad was striving to reach newly discovered coal fields and open the country west of this tunnel to sea-borne transportation. In recent years, the small size of this tunnel made it necessary to detour some cars carrying large loads over a circuitous route, caus-

A modern ventilating system installed at the west portal forces air easterly through the tunnel at a speed of about 15 m.p.h. Two motor-driven fans deliver a million cubic feet of air a minute through the tunnel. This picture also shows a work train unloading some of the butt-welded 140-lb. rail which was used in the tunnel

Bore Gives Lift to Operations

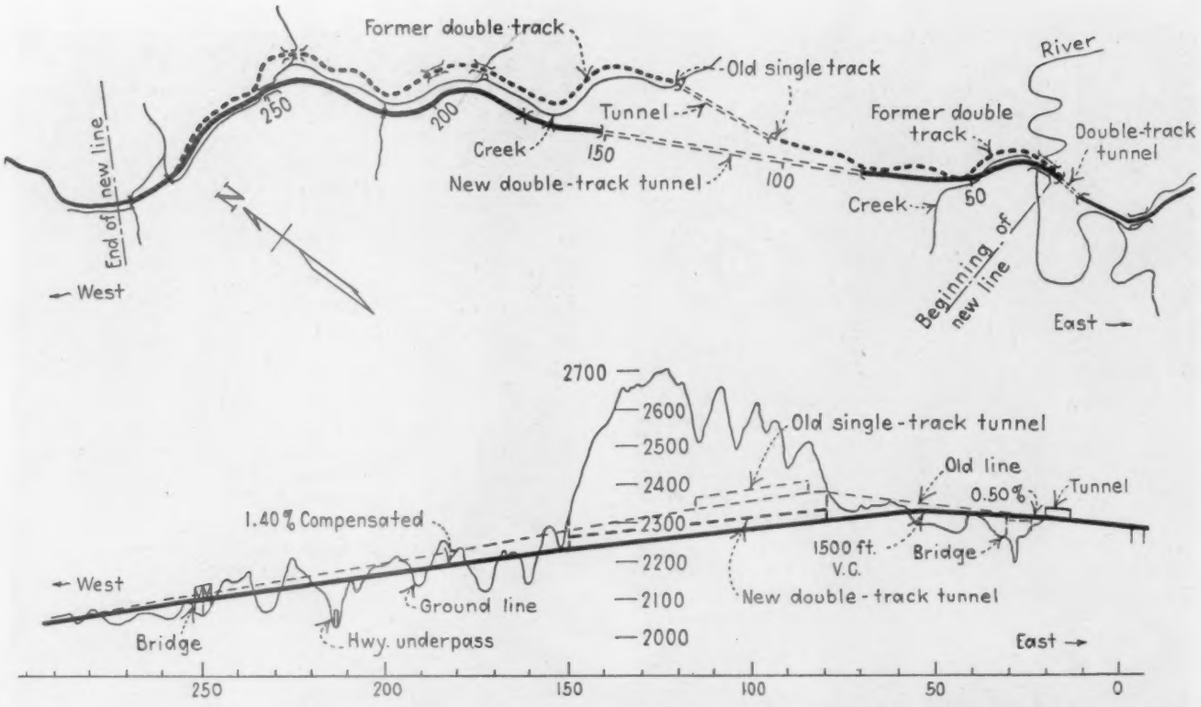
Important operating advantages and other benefits stem from 5.28-mile line improvement embracing a new double-track tunnel

ing delays to this traffic. Furthermore, the operation of steam power exclusively through the single-track tunnel was not practical because of the heat and gases generated at low speeds—conditions which necessitated the use of electric helper locomotives.

Because of the reduced grades of the new line, the new tunnel averages 85½ ft. below the level of the old bore, being 81.4 ft. lower at the east end and 109.6 ft. lower at the west end. It is almost 4,100 ft. longer. Prior to its construction, the railroad made test borings to determine the character of the rock to be encountered. These test holes were core drilled at intervals of approximately 1,000 ft. and to a depth of about 20 ft. below the tunnel grade. The borings developed that the tunnel would be driven mostly through hard sandstone, with some slate, shale and a few coal seams to be encountered.

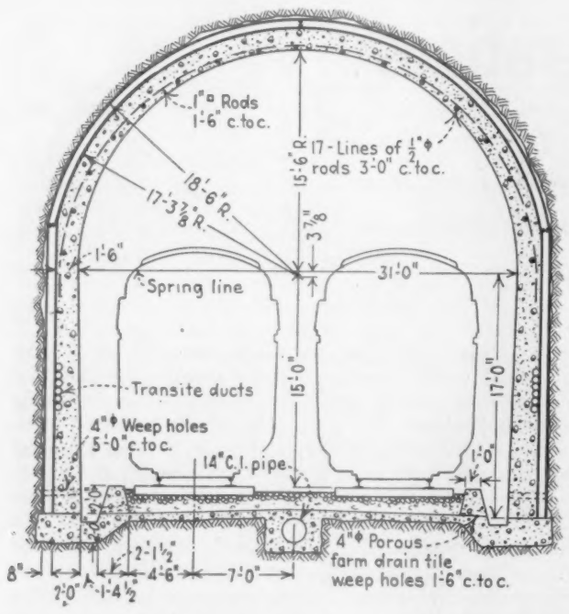
The cross section of the new tunnel was built in the shape of an inverted U and is about 36 ft. high and 35 ft. wide—a size which permitted the use of large standard earth-moving equipment instead of the smaller equipment usually employed in railroad tunnel construction. To accommodate this large equipment, two special drill carriages or jumbos were constructed, permitting drilling operations to be carried on simultaneously from each end of the bore. These same jumbos were used later in placing the concrete lining.

The drill carriages, weighing 32 tons each, had frames of 10-in. steel H-beams mounted on six cast-steel railroad



Plan and profile of the new double-track line change and tunnel which effected a reduction of 0.36 mile in distance, as compared with the old route, along with reduced curvature and grades

wheels. They operated on tracks consisting of widely-spaced 100-lb. rails laid on short wood ties. Each drill carriage had four plank platforms on different levels, with the central portions of the two lower platforms hinged to allow them to be dropped for the passage of trucks and other equipment to the working face. The top platform was necessarily narrower than the others to conform with the tunnel arch, and the device as a whole was shaped to serve as a template.



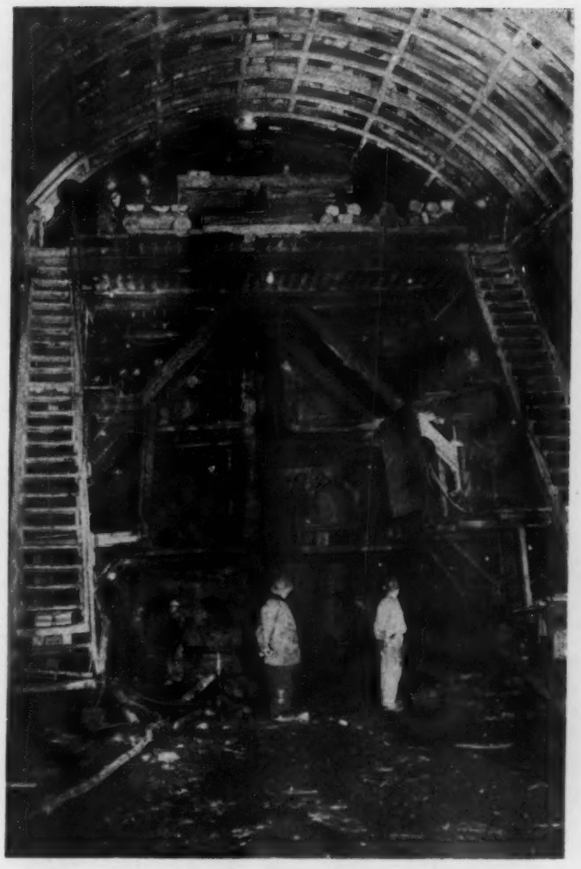
Cross section of the new tunnel. It is of such size that standard earthmoving equipment could be used in constructing it instead of the smaller units usually employed

The working faces of the drill carriages were each equipped with 15 Ingersoll-Rand power-feed drifters, so mounted that they could be moved about to drill several holes from the same relative position. The drilling crew at each working face consisted of 35 men. Power for the drifters was supplied by a battery of eight Ingersoll-Rand air compressors having a combined capacity of 4,000 c.f.m. at 105 p.s.i. pressure. The compressors were stationed in a building near the west portal, necessitating the laying of about 7,800 ft. of 6-in. metal tubing to deliver air over the mountain to the east portal.

700 Cu. Yd. at a Blast

A total of 210 holes were drilled for each blasting charge, the holes being started with 2½-in. bits and finished with 1¾-in. bits to a depth of 15 ft. After the holes for each charge were loaded with about 1,800 lb. of 40-per cent gelatin dynamite, the drill carriage was moved back to a safe distance by a diesel-powered tractor and the charges were detonated with 440-volt blasting caps arranged to fire at 10 one-second intervals. Each charge generally produced an advance of 14 ft. and 700 cu. yd. of muck.

Two crews, each working a 10-hour shift, were used at the west working face, and a full day was required for these two crews to complete a round of drilling, blasting and mucking, and also the setting of steel liners to support the sides and roof. Mucking operations after each charge required from five to six hours and were carried out by the day shift. Only one crew, working a 10-hr. shift, was used at the east working face. This crew would take a day to drill and blast the rock and the next day to do the mucking and to set the tunnel liners. The arrangement of shifts was such that the full capacity of



Left—One of the two special drill carriages constructed to permit drilling operations to be carried out from each end of the bore. Mounted on railroad trucks, the carriage was rolled back from the face after the drift holes had been made and blasting charges set. After the blasting, the hinged platforms of the drill carriage were raised so that earthmoving equipment could pass to the face for mucking operations. Right—When the muck had been cleaned out, the drill carriage was rolled back to the face and a diesel-powered crane assisted in setting the steel liner ribs

the compressors was available for each crew when needed for drilling.

For mucking operations, the hinged platforms of the drill carriages were lowered and a Lorain shovel with a 2¼-cu. yd. dipper and 15-ton rear-dump Euclid trucks, all diesel powered, moved to the working face. The width of the bore permitted the trucks to pass each other, turn, and back up beside the shovel. Electric blowers were used to ventilate the working face so that the use of diesel-powered machines was possible.

When the mucking had been completed, the drill carriage was again pushed up to the working face and, with the assistance of a diesel-powered crane, steel liner ribs were erected to within a few feet of the face. Each of these consisted of four sections of 8-in. 35-lb. H-beams. Two of the sections were posts which were raised by hand to set on timber sills, and the other two sections were quarter-circle members which were raised by the crane and bolted together and to the posts. The liner ribs were generally placed at 30-in. centers, were tied together laterally with ¾-in. tie rods, and were wedged against the rock with wood blocking.

Since the grade in the tunnel descends from east to west, there was no drainage problem at the west end during the drilling operations, but water collected at the east face and had to be pumped out with an Ingersoll-Rand air-operated sump pump to a point near the portal, where it was picked up by two motor-driven pumps and discharged over a nearby bank.

The tunnel was "holed through" on June 24, 1949, just 449 working days after drilling was commenced, and 36 calendar days ahead of schedule. The drill crews met at a point about 1,720 ft. from the east portal with a variance of less than one inch.

Concrete Lining

The tunnel was lined with concrete, reinforced over the arch, and the steel liner ribs became an integral part of the lining. Around the arch and down to the springing line the inner surface of the concrete lining measures 18 in. from the inner faces of the ribs. From the springing line downward the surface of the lining tapers inward on both sides of the tunnel so that at the top of the floor footing the surface is 24 in. from the ribs. The footings on each side are a minimum of 2 ft. thick and about 4 ft. 10 in. wide, and were poured monolithically with a portion of the invert floor, ending 8 ft. from the faces of the liner ribs.

For the side walls and the arch of the tunnel two movable steel forms, each 45 ft. long, were used, being supported by the previously cast footings. This concreting

work was started at two locations—the east portal and at the mid-point of the tunnel—and progressed in a westerly direction from each location. Refuge bays, 18 in. deep and 5 ft. wide by 9 ft. high, were built into the side walls 200 ft. apart and staggered with respect to each other. The concrete floor of the tunnel has a minimum thickness of 6 in. and is crowned at the center. A 14-in. cast iron pipe was laid under the floor slab to carry water through the tunnel. Side gutters in the spaces between the ballast walls and the side walls carry away seepage, condensation and traffic drippings. Weep holes, consisting of 4-in. drain tile, were spaced on 1-ft. 6-in. centers in the ballast walls and on 5-ft. centers in the tunnel side walls.

The contractor's concrete batching plant was set up near the west tunnel entrance. From here, diesel-powered mixing trucks carried the concrete mix to electrically operated Pumpcrete machines having double discharge lines delivering it to the forms. To assure water tightness and workability about ½-lb. of standard Pozzolith admixture was added to the mix for each bag of cement. In general, the mix for each cubic yard of concrete consisted of six bags of Portland cement, 1,398 lb. of washed sand, 2,071 lb. of washed gravel, and the admixture.

Modern Ventilating System

A modern ventilating system was installed to deliver a million cubic feet of air a minute through the tunnel. This system embodies two motor-driven fans, furnished by the Sturtevant Division of Westinghouse Electric Corporation, which force the air easterly through the tunnel at a speed of about 15 m.p.h. This system is designed to blow the smoke of a front locomotive of an eastbound train ahead of it and that from a rear locomotive ahead of that engine but not fast enough to overtake the head locomotive before it leaves the tunnel. The calculated air speed of 15 m.p.h. is based on no wind but, since the prevailing wind is from the west, the speed of the air movement, it is believed, will be increased. The effect of the piston action of a train was not considered in the air-speed calculations.

Power for the tunnel lights, motors, and other electrical equipment was brought in over a special pole line at 66,000 volts. This is stepped down by transformers to the required voltage. The signal, telephone, telegraph, and power lines are carried through the tunnel in about 85,000 lin. ft. of Transite Korduct embedded in the side walls.

The tracks in the tunnel are supported on stone ballast 12 in. deep under the ties, and consist through the tunnel of butt-welded 140-lb. rails laid on tie plates 17 in. long placed on 8-ft. 6-in. treated crossties. Inner guard rails were laid through and slightly beyond the ends of the tunnel.

The magnitude of this line-change project can be appreciated by a review of some of the quantities involved. More than a million cubic yards of excavation, of which the tunnel accounted for 315,000 cu. yd. of rock, was moved. About 5,000 tons of steel liner ribs and 555 tons of reinforcing bars were used with 92,000 cu. yd. of concrete to form the tunnel lining. Approximately 26,000 lin. ft. of drain tile were used in construction of the tunnel.

The project was completed in June, 1950, and the road's eastbound "Powhatan Arrow" broke a ribbon at the east portal of the tunnel at ceremonies on June 26 to mark its completion. The work was undertaken under the general supervision of W. P. Wiltsee, chief engineer, who subsequently retired and was succeeded by A. B. Stone. B. E. Crumpler, assistant engineer, and C. W. Fiery and Roscoe Porter, both resident engineers, were in charge of the work in the field for the railroad. The overall contract was held by Sturm & Dillard Construction Co., Columbus, Ohio, and the firm of Haley, Chisholm & Morris, Charlottesville, Va., subcontracted the work of building the tunnel, which was done under the direct supervision of Robert E. Parker.

Communication . . .

Mr. Faricy's Work for Latin-American Friendship

ALBUQUERQUE, N. M.

TO THE EDITOR:

I have written to President Truman the following letter:

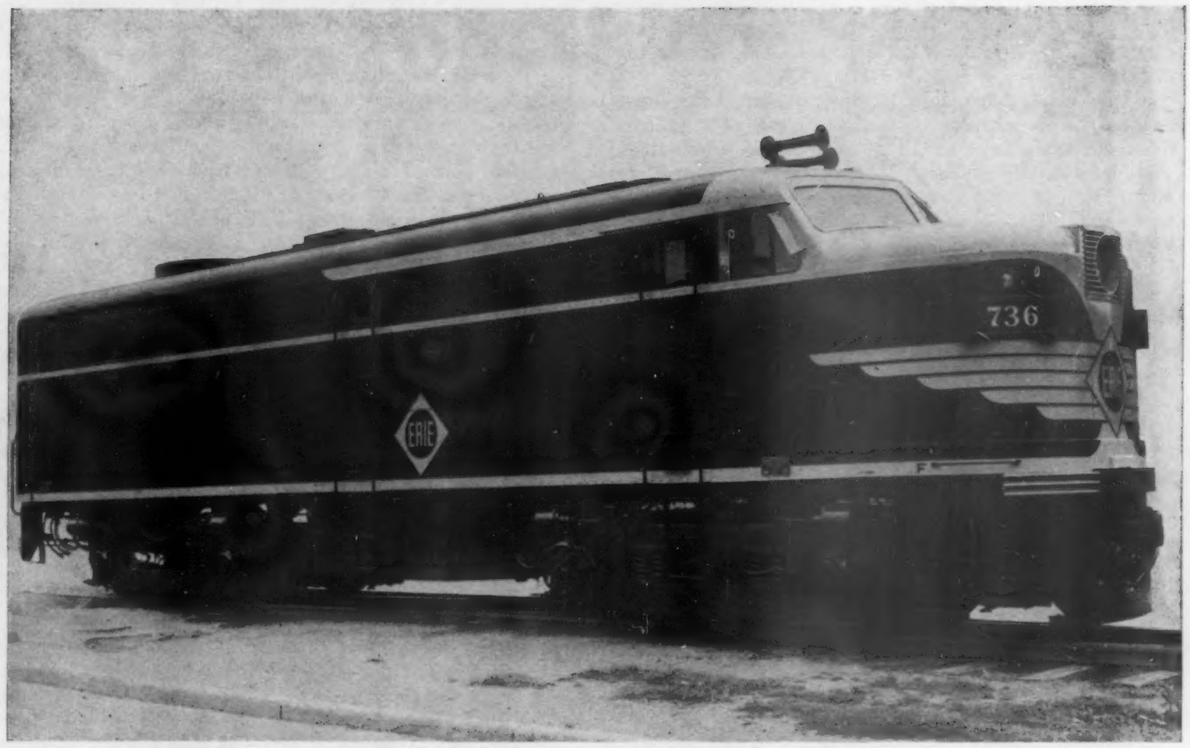
"As one who had a minor part in getting the United States government to participate officially in the Pan American Railway Congress, I was very much interested in going to the first Congress of which the United States had official status [Mexico City, October 10-20]. As you may recall, William T. Faricy, president of the Association of American Railroads, has from the beginning been interested in this project and was one of a delegation of three American observers in the Pan American Railway Congress in Havana in 1948.

"Mr. Faricy is to be strongly commended for his work in getting key railway men in the United States interested in the Pan American Railway Congress. The State Department, the Commerce Department and the Interstate Commerce Commission contributed to the success of the American delegation at the Congress, but it is my belief, based on attendance at the Congress and discussions with people in a position to know the background of the American effort, that the primary credit belongs to Mr. Faricy for his positive, enlightened leadership. It should be borne in mind that the Association of American Railroads does not have anything to sell Latin America. Financially, it is not a gainer by participation in the Congress, and it is my belief that Mr. Faricy was motivated by the sincere desire to make accessible to the Latin American countries American 'know-how.'

"At no time during the Congress did I observe or hear any sign of Mr. Faricy using his position as head of the American delegation to unfairly further railroad interests as compared to other transportation interests in the United States. Mr. Faricy's friendly attitude and modest bearing made him an outstanding personal success as head of the American delegation. He further had the good judgment when controversial issues arose to let Latin Americans carry the ball."

JULIAN S. DUNCAN
Chairman,
Department of Economics
University of New Mexico

"It seems that congress and state legislatures are waking up to the fact that rail transportation is a highly competitive business and that they [the railroads] are entitled to better consideration when their importance in our country's development and transportation are concerned. Let's put the question frankly, What would this nation do without ample railroad transportation facilities during wartime alone? They are entitled to a fair deal."—*Wichita Falls, Tex., Record-News.*



Versatility Stressed in Alco-G. E. Dual-Purpose Road Locomotive

Higher electrical capacity steps up tractive force nearly 25 per cent—Optional gear ratios give top speeds from 65 to 92 m.p.h.—Engine capacity 1,600 hp.

By JOHN P. DeLANEY
Alco-G.E. Division, American Locomotive Company

and JOSEPH H. GAUSS
Alco-G.E. Division, General Electric Company

The American Locomotive-General Electric road freight locomotive, of which approximately one million horsepower has been delivered to the nation's railroads since 1945, has been redesigned for dual-purpose application in both freight and passenger service.

Installation of steam generating equipment as a modification and optional traction motor gearing enables railroads to utilize this 1,600-hp. dual-purpose road locomotive in main-line passenger service.

The standard weight of the Alco-G.E. freight locomotive has been increased to 240,000 lb. from 230,000 lb. As a modification, weight can be increased to 250,000 lb. by addition of ballast. To facilitate application of steam generating equipment the length of units inside knuckles has been increased approximately two feet and equipment rearranged for proper weight distribution.

A steam generator with evaporating capacity of 2,750 lb. of steam per hour may be applied to either A or B units. A steam generator of 4,500 lb. per hour capacity may be installed in the B unit. A 1,200-gal. water tank of welded steel construction, located below the cab underframe, is equipped with a remote reading level indicator.

In addition to broadening its application, Alco-G.E. engineers have re-examined the basic locomotive in the

light of five years' operating experience with the twin objective of improving performance and simplifying maintenance.

Major improvements in traction motor design have resulted in an increase of nearly 25 per cent in continuous tractive force on all Alco-G.E. road locomotives. The new motor approaches a self-protecting traction motor, allowing operation in many cases up to the point of locomotive wheel-slip without entering the range of short-time restrictions. This is accomplished with gear combinations which provide high maximum speed as well as increased hauling ability. Optional gearing provides maximum speeds ranging from 65 through 92 m.p.h.

Continuous operation up to 52,500 lb. tractive force is available with the new traction motor, an increase of almost 25 per cent over the former 42,500 lb. tractive force for the same 65 m.p.h. maximum-speed gearing. This improved performance has been made possible through the use of new insulating materials. The engineer's load meter now shows a continuous current of 1,085 amperes, compared with the former maximum of 900 amperes.

The approved traction motor overhaul period has been increased to 300,000 miles. Traction motor refinements include the use of felt-wick lubrication of axle suspension bearings and a self-closing lubrication door to the gear case.

Lubrication Periods Lengthened

Lubrication periods for traction motor armature bearings have been greatly lengthened. Permanently packed, high-temperature lubrication of the traction motor armature bearings, adopted as standard almost two years ago, has proved most successful, and is being continued. This lubrication, operated from overhaul to overhaul without greasing service, has not only reduced maintenance but has also increased armature bearing reliability and life.

Progressive overhaul scheduling has extended the maximum life of traction motor armature bearings through three additional overhaul periods to 1,200,000 miles.

Sealed, long-life lubrication of bearings identical with that applied to traction motor armature bearings is used on the main generator and all other electrical rotating equipment.

The Alco-G.E. main generator is directly coupled to the engine independent of the locomotive structure. Rated 1,600 hp. at 1,000 r.p.m., this generator incorporates recent developments in traction-generator design. Collection chambers, incorporated in the one-piece adapter which connects the generator frame to the engine, direct exhaust air from the generator out of the engine room. The resulting lower engine-room temperature makes possible lower temperatures in the windings, greater loading capacity and longer life of the electrical equipment.

The engine turbosupercharger produces high horsepower per cubic inch of cylinder displacement at an unusually low fuel rate, and in this way locomotive dimensions can be held to a minimum. With the turbosupercharged diesel engine, horsepower output is practically unaffected by altitude up to 10,000 ft.

The engine governor has been redesigned so that the oil reservoir is now an integral part of the governor and is reduced in size. A new window in the reservoir allows for checking the oil level without danger of introducing dirt. The number of moving parts in the governor has been reduced slightly and greater interchangeability of components is provided.

The close coordination of the governor and excitation system for exact control of power output has been maintained. Among the characteristics attained by this system are extremely fast response to engineman's throttle, positive control of current and tractive force, inherent resistance to the tendency of traction motors or the main generator to flash over, and actual anticipation of changes in load. In addition, improved wheel slip protection is now provided. Power is reapplied gradually, rather than immediately, after a wheel slip, thereby greatly decreasing the tendency of wheel-slip recurrence.

Engine Power Increased

Power of the V-type, 12-cylinder, turbosupercharged Alco diesel engine has been increased from 1,500 hp. to 1,600 hp. This extra power has been made available through development of more of the engine potential.

The 1,600-hp. locomotive engine-generator assembly, subject to substitution of a traction-motor blower for an auxiliary generator, is interchangeable with the Alco-G.E. 1,600-hp. road switcher assembly. Engine and generator are installed as a single, compact unit.

Engine lubrication through a full pressure system is provided by a gear-type pump integral with the engine, oil being supplied from the reservoir in the engine base. The filter system is of a new by-pass type, which allows substantially greater flow of oil in cold-weather starting, prevents channeling in oil filters, and prevents a plugged oil filter from causing emergency engine shutdown. The lubricating oil is cooled by a single-pass cooler. Low lubricating oil pressure automatically idles or stops the engine.

An electrically driven transfer pump, in the engine room, supplies fuel from the supply tank to the injection pumps. The supply pipe to the transfer pump is fitted with a duplex waste-packed filter on the suction side and a single filter on the discharge side. In the discharge pipe from the transfer pump are a pressure relief valve and pressure gage.

Engine cooling is accomplished by a gear-driven centrifugal pump, integral with the diesel engine, which circulates water through the engine, radiators and lubricating oil cooler. A radiator of the panel type is mounted in the roof near the rear end of the engine compartment.

The 72-in. aphonic radiator fan is driven through a right-angle gear box and a magnetic clutch. The clutch is located between the gear box and the engine driveshaft coupling. This clutch provides a damper in the drive system against shocks or torsional vibrations and permits superior modulations of fan speed control. Air is drawn through the radiators and exhausted through a screened opening in the roof.

The thermostat-controlled fan speed and the shutters are synchronized and when the shutters are closed the fan does not run. Temperature control for the engine is thus reduced to one variable—the temperature of the jacket water.

The air brakes are schedule 24-RL, with automatic and independent air brakes on all wheels. Air is supplied by a two-stage, three-cylinder compressor directly driven by the main engine. The displacement at idling speed (350 r.p.m.) is 78.75 c.f.m. and at full engine speed (1,000 r.p.m.) is 225 c.f.m. Two main reservoirs have a total capacity of 35,800 cu. in.

The trucks on the dual-purpose road locomotive have four wheels and are of the swivel, equalized, swing motion, pedestal type.

An Investor's View of Transportation

By S. S. HALL, JR.,
Vice-president
New England Mutual Life Insurance Company

Various services that make up what we term transportation, combined, represent a very substantial part of our total economy. Some 20 per cent of the capital investment of the country is in this field; and if one took into account various ramifications which are almost a part of the transportation operation, such as the factories which produce trucks and automobiles, it would of course be much enlarged over that one-fifth. The various elements in transportation are basic to a large part of our industry, whether connected with the production of its capital investments or in keeping it operating.

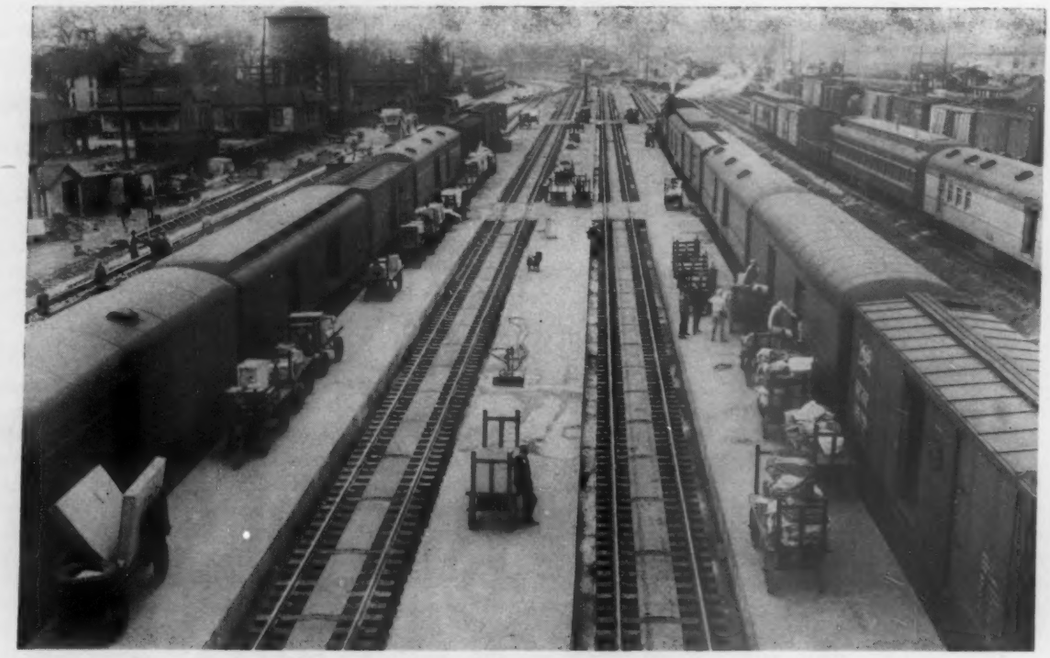
Historically, the direct investment of institutions in certain elements of the transportation field have been, in the past, larger and far more important than the 20 per cent of capital investment which in general the industry represented. Railroad bonds were a sure medium of investment for insurance companies, businesses, and other corporate investors, not many years ago. The record had been relatively good, and satisfies careful analysis. Today, it seems in looking back that they constituted an amazingly large portion of a typical list of investments. Stocks were held in small measure by institutions, but were a favored medium for the substantial individual investor.

An abstract of a paper delivered at the New England Institute of Transportation, sponsored by the Transportation Association of America at Boston, Mass., on September 28, and reported in Railway Age of October 7, page 76.

Due to several reasons, new funds that formerly went into railroad bonds now go into bonds of the utility companies and fixed obligations of industrial companies of all kinds. The change is of comparatively recent date, but has progressed rapidly in the last 20 years. Actually, the dollar amount of investment in railroad bonds has scarcely changed at all in the life insurance companies during the last 10 years. The present figure of about $3 billion is little below the proportionately big holdings of 20 years ago. However, in that interval of great expansion in assets, the allocation of funds has increased holdings of only a little over $1.6 billion in 1930 to $9 billion in public utility bonds at present. Likewise, industrial company bonds and notes held amounted to a mere $300 million in 1930, but are now approximately $8.5 billion. Since only a few life insurance companies can buy stocks, they are not any real factors; but changes in laws may come to modify this position in the future.

On the other hand, larger buyers of stocks, such as endowment funds and investment trusts, have shifted their emphasis, particularly toward stocks of industrial companies, with electric power and light companies a growing factor, but in second place. The same, in general, is true for the average individual investor.

Such changes have been brought about by loss of confidence in railroad credit and growing confusion as



to regulation and competition; and the resultant bankruptcies of the 1930 period. Earnings have been erratic and even very poor. The average return on invested capital, that has seldom reached four per cent in any year, except a couple of war years, has been far below that of the regulated electric and gas business. While industrial companies have wide swings, when the going is good they show real results which outweigh the poor years.

The prevailing feeling is that [transportation] regulatory authorities render only lip service to the theory of adequate return. The result is a record of poor earnings in poor years, and inadequate net in the periods when traffic is heavy. After enough such demonstrations, the investor shrugs his shoulders and comments that regulation and labor have the roads by the throat. Part of the price of being regulated by a federal government that is looking first of all for labor votes, is disregard of consequences until extensive damage has been done. One agency listens to a few labor leaders, figures it good politics to up wages; and then another deliberates long and carefully over the resultant rate increases that are necessary. Incidentally, a few shippers yell loudly about a rate increase while raising their own prices much more.

Another influence on the mind of the investor, large and small, arises from the bankruptcy statutes and the results to railroad security holders in the 1930's and early 1940's. The old equity practices were replaced by new laws intended to improve procedures. Like so many changes, the full consequences were not foreseen. Partly due to economic and political conditions, securities of roads in trouble went to unbelievably low prices in the drop in 1937 and later. While the process of interpretation of the new law and its application was being worked out, some 10 years elapsed. Even patient holders got worn out waiting, and so-called intelligent investors took huge losses. Eventually, with the aid of war earnings, most depressed bonds rose to fairly respectable prices. But real damage had been done.

The Interstate Commerce Commission still does not seem to realize this. Time seems to mean nothing to it. For example, I have for 10 years been a member of a committee representing the first mortgage bonds of the Wisconsin Central that went into receivership some 18 years ago; has had rather good earnings for the last 10 years; is in strong current position and settled all important disputes except the division of the spoils among various security holders. In spite of a plan of reorganization based on the pattern approved by the I.C.C. in many cases in the last 10 years, and generally approved several years ago by an I.C.C. examiner, we still await action.

Discouraging the Stockholder

But even worse is the picture of what was done to the stockholders. Almost all common stocks of some 20 roads have been wiped out, and preferred stocks have had generally the same treatment. As the arbiter of rates and values, the I.C.C., which has found investment in rail property far exceeded the capitalizations of most roads, demanded new capitalizations based not on investment in property but in guessed-at future earnings. That was as much as saying that they would see to it that these roads would not be allowed to earn a decent return on investment. Even though I have been a party to such reorganization procedure, through various protective committees, I now feel an injustice has been done in many cases; and that at least some equity values should have been recognized. The result is part of the present disgust, and even fear of having anything to do with carrier equities. I know it likewise affects the point of view toward truck lines and their potential treatment in the future.

The record is most discouraging to most investors who ask the ever present questions of all Americans; "What is the price?" and "Does it work?" When the answer is that even one of the best agencies of bureaucracy can and has snuffed out previously authorized stock investments which looked as though they should still have future value, the investor is very dubious. And then up goes the price of capital for improvements and enlarged capacity. For, strange to say, both are needed and all carriers are squirming to find the needed funds so as to meet a real demand.

In spite of and partly because of the above, there are a few choice opportunities from time to time. Those who can and are willing to look carefully and examine fully, have greater rewards than those who generalize and stop there. Some faith may be required, but good judgment is as ever compensated.

Competition and Subsidy

The subject of competition divides into a number of elements. One of these is the growth of new methods. The major factor here is the development of the internal combustion engine. That, in sequence, brought new and better roads which furnish the right-of-way for trucks and took from the rails most of the passenger business. Of course the last turn in the wheel now finds the internal combustion engine coming to the rescue of the railroad in the form of the diesel locomotive. Perhaps this is part of the irony of fate which seems to have the ability of leading us around in circles.

Another element is the large question of subsidy. That in turn has aspects that are difficult to separate and which lead to confusion and argument. What part should be called legitimate assistance in development of new factors, such as the airplane? When do questions of national defense seem to make governmental aid proper? And where do just plain politics or even local pride create unthought-out difficulties? How many people, for example, realize that huge state expenditures at the airport, in relation to present and prospective traffic value to Boston, almost guarantee poorer rail and ship service to Boston?

The fact that the railroads no longer have a monopoly of transportation in general, is only slowly coming home to most people. In the case of certain kinds of commodities, and over longer distances, that is still only partially true. But I know of one large steel mill where heavy steel goes out to the extent of almost 90 per cent today by water or by truck, where five years ago the railroads handled most of the output. Perhaps the cycle will shift back again in due course, but who of us can tell that at the moment? Rates are a major influence, but service is almost more important.

Investors and Trucks

The exact status of the trucker is relatively unknown to the average investor. Even most institutional men are in doubt as to whether there is a subject here for anything other than small and local financing. There are of course a few large companies, and right now there is pending the question of a major western freight line becoming a transcontinental operation. Since most such carriers have developed from small local beginnings, with little investment and much indebtedness for trucks and trailers and rentals for such property as is used

for garaging and loading or interchange, they are known to few large investors. Only if there is a further growth of the intercity units will they become more of a factor in the financial field. As it has been in part this smaller and localized characteristic that has brought about some of the sharp appearance of competition, perhaps the larger organizations will fall more easily into the national pattern in the future.

Many more points that arise for analysis cannot be examined here. I refer to the large and tempting subject of further consolidation of railroad lines and facilities, for example. And equally unworked out is the subject of coordination between the various types of carrier. Why, from the point of view of the investor or the user, should not the rail and truck be treated more extensively as a common facility? If our government is to continue playing with endless millions of our tax money in the rivers, why should not the rails in that area own and operate barges if and where it is advantageous to the shipper? As I have said, I do not believe there is today any real monopoly; and if there is even a wee bit, it is the federal government that exercises it. Overdone regulation and tax supported business activity is not the American way.

The investor point of view, in the aggregate, determines the flow of funds and the cost of financing the growth and changes necessary to keep pace. Sweeping and rapid changes in transportation requires huge supplies of capital for plant, equipment and operation.

Big—but Essential—Job

It is quite obvious that if we are going to have the best results in the transportation field, it seems time to carry out as quickly as possible the job which the Transportation Association of America has undertaken. I believe a review of all factors, such as has been undertaken by the association, is essential. The elements and necessary action to be taken must be repeated over and over again so as to lead to a rewriting of many of the statutes and practices that have grown up over the years. There is nothing new nor unique in such an operation except that someone must undertake it; and someone must furnish the initiative and leadership.

The job is a large one. All forms of transportation and users, as well as the government itself, should be vitally interested. The alternative is seen in most other countries where railroads, shipping, and many other branches have already succumbed to adverse factors and become governmental agencies. This big step helps to excuse other moves in governmental operation of other kinds of industry. I still believe that most of us in this country honestly do not approve some of the action which already has been taken in that direction in our own country.

All of this is a recognition of change from the days when the I.C.C. was developed. It does not seem to me necessary nor proper to do away with regulation. Some of us who have wished to see revision have been accused of that point of view, or have been told that that is the only answer. I do not believe so. I do believe, however, that there is great difficulty in bringing about the desired results. Perhaps the inevitable flow of words, that arises from minor differences in opinion as to how such changes should be made, confuses many even to the point of wondering whether any common ground can be found to reconcile conflicting interests. To some who are too ready to give up easily, the question quickly arises whether it is even worthwhile; but to me that is only the result of lack of information as to the importance of the problems, or sheer laziness. The former is harder to meet and overcome than many of us realize.

Since some 60 per cent of the transportation of goods is performed by the railroads, that part of the carrier service is basic. Accordingly, a major portion of the thought and effort must be directed to that field, especially since a preponderance of regulation and laws and control has been aimed that way in the past. Undoubtedly, some part of the problem must be analyzed and revamped by railroad-trained men. They should be leaders and know most, as to certain details, from their direct experience.

I, for one, hope that these meetings will result in material for the lawyers to put into proper language before too long so that they may be presented to the congressional committees for final review and action. This is a huge undertaking; it requires the weight of many shoulders behind the wheel. All of us can aid in accomplishing major results for the common good, since it takes examination through many eyes and the scrutiny of all kinds of minds to cover such a broad and fundamental field.

This was the old message desk. Each clerk handled reservation requests for any date. Consequently, he would have to leave his seat to file requests and to get to the "waiting to be picked up" file. Reservations for which a reply was being awaited were filed in pigeonholes at the top of the desk. Those which were to be picked up, after patrons were notified, were filed alphabetically by date in boxes which can be seen just below the pigeon holes

The new

N. Y. C. Improves Reservation Handling

Simplified filing system, at clerks' finger tips, speeds service

New equipment and revised procedures have speeded up and made more efficient the work of the New York Central's message center which handles passenger reservations, both to points beyond the local lines and return reservations. These results, mainly, have come about because the files now are more readily available to clerks, thus saving much time. Also, filing is found to be more accurate, and the operation is more flexible, so that, if necessary, clerks who normally handle the job of calling patrons to tell them reservations may be picked up can be transferred to take incoming calls.

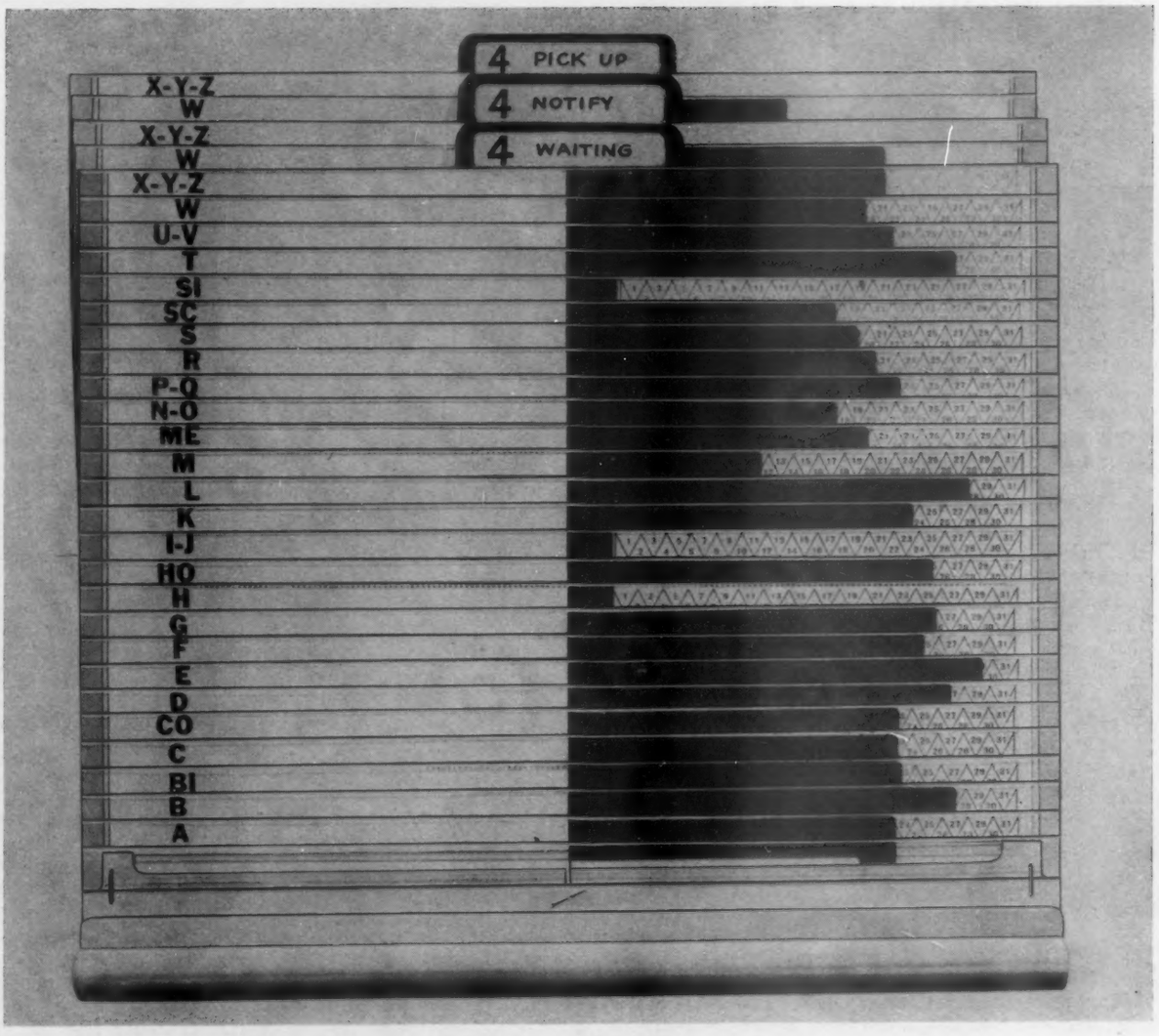
Arrangement of files in drawer

Now when a message-center clerk receives a request for a reservation, say from Chicago to New York, the clerk makes out a form in duplicate. The duplicate is filed under "Waiting" replies (see illustration) and the original goes to the railroad's telegraph office, which sends a message to the station from which the passenger will make his return trip, asking for space. Once the answering wire is in, the duplicate is pulled, matched with the telegram and filed under "Notify." Then the patron is called and given the date to pick up his reservation, and the documents are filed under "Pick up." On the date that the pick up is to be made, clerks check to see if this has been done, so that if it has not the other station may be notified that the space is "open" again. When the documents are filed under "Pick up" a Graph-a-matic signal is set to indicate the earliest date of pick up of the items in the group. Once the space has been taken up the documents are transferred to the "dead" file.

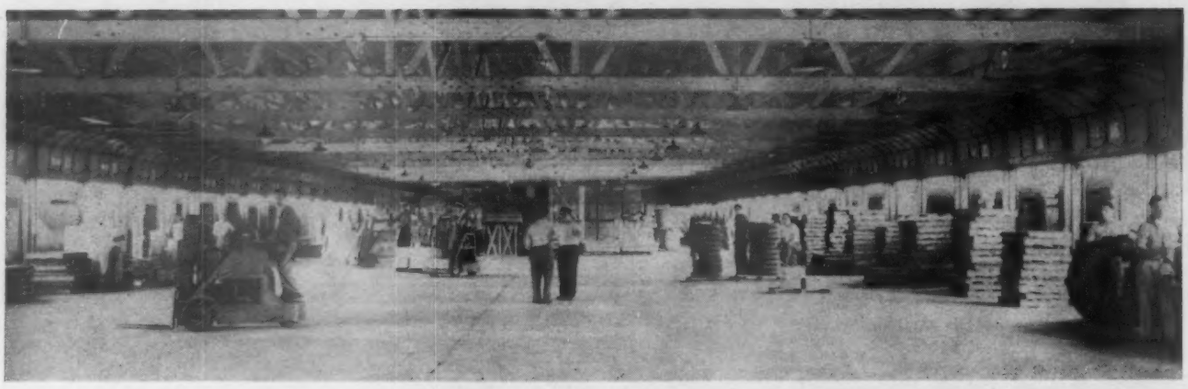
Three units of four small desks each, arranged so that each clerk can easily reach the revolving file drawer in the center, comprise the working units. Each group of four clerks handles reservations for a ten-day period of the month. All files pertaining to that ten-day period are retained in one of the three pockets allocated to each day.

Desks and file drawers were designed and installed by Remington Rand Inc. under the direction of F. H. Baird, general passenger traffic manager, E. N. Adams, assistant to general passenger agent, and John Carter, manager of the reservation bureau at Grand Central Terminal, New York.

The new setup, showing desk arrangement and easy accessibility to file



This shows the arrangement for alphabetical filing under "Waiting," also the "Notify" and "Pick up" panels



THE NEW $600,000 FREIGHT TERMINAL of Mid-States Freight Lines in Chicago lends itself admirably to fast-moving mechanical equipment. The operation is fully palletized

"Central Checking" Proves Boon In Big Truck Terminal

Gang-less station gets most out of mechanical equipment by eliminating dock checking and by consolidating loading instructions

To a brand-new freight terminal designed especially for a fleet of fast-moving fork-lift trucks, Mid-States Freight Lines has added complete palletization of freight while moving through the terminal plus a new system of directing that movement—"central checking."

Railway Age is describing this new installation, on the grounds that (1) railroad and truck stations have many problems in common, and (2) the railroads ought to keep an eye on their competitors. [It ought to be said parenthetically that our representative saw in this particular truck terminal a floor full of good-looking, good-loading freight, easily adapted to palletization, and that the awkward pieces so common in railroad freight stations were rare. But that is a rate matter.—EDITOR]

Palletization and "central checking" have, according to Mid-States, put "the real pay-off" into its new $600,000 general headquarters, garage and transfer terminal in Chicago's South Side, opened formally in September. The freight handling dock itself is 67 ft. wide and 363 ft. long, of clear span construction, with reinforced concrete hardened floor, and sidewalls of structural steel with one continuous panel of glass for light. It has 36 overhead-type doors on each side, each of them 9 ft. 4 in. wide. With few exceptions the openings on one side are for incoming trailers and those on the other for outgoing. Height from floor to bottom of trusses is 12 ft.

The terminal is the main transfer point between the eastern and western lines of Mid-States, which estimates that it is around the eighth or tenth largest trucker in the country. It is the fourth terminal built by the company in Chicago in ten years, each of its predecessors having proved too small to handle the load. Volume over the platform (counted once) presently runs about 2½ million pounds a day.

Except for a rare shipment, all freight handled over the platform is palletized within the trailer or at the tailboard and so remains until it is placed in the outgoing trailer. The pallets do not leave the terminal. A small but growing proportion of traffic is palletized by shippers themselves, prior to pickup, and it remains palletized, of course, throughout its journey. Movements are made by a fleet of Mobilift gasoline-powered fork-lift trucks.

The backbone of the system, however, which has enabled this terminal to lift the rate of handling per man from 500 to 700 lb. an hour to more than 2,500 lb., is "central checking." And the "without which nothing" of central checking is an Executone system of wired communications by which three or four checkers, seated in an air-conditioned, soundproofed office, up off the platform, keep in close touch with every move on the platform and direct every operation in accordance with this intelligence. Central checking has eliminated the freight handling "gangs," the delays, the fumbling of papers and the overs-and-shorts which, according to Mid-States, attend tailboard checking-off and -on, which is the common method of handling truck freight.

Central checking was devised following personal study by Mid-States officers of freight handling systems in numerous truck and railroad terminals over the country. They "took an idea here and an idea there," but believe they have pushed the technique of separating, physically, checking and handling operations beyond that reached by other operators.

Here is how central checking works. A driver coming in off the road or from local pickup work takes all bills or tickets directly to the central checking office. Here the checkers, seated before a long desk, begin to plan

THE PRIME FEATURE OF THE TERMINAL'S OPERATION is "central checking" whereby all paper work is performed by three or four checkers quartered in this sound-proof, air-conditioned, and well-lighted office. Checkers are in constant touch with platform men by means of a communications system

THESE ARE dispatchers for Mid-States Freight Lines, working in their new offices in Chicago. The company is testing short-wave radio communication with over-the-road trucks

disposition of each shipment even before it is unloaded. Down on the dock, unloaders, working singly and not in gangs, "strip" the trailers, stacking the freight on house pallets. When a pallet is loaded, the unloader uses the communication system—which has a pickup at each of the 72 doors on the dock—to report the shipment (commodity, number of pieces, and destination) to central checking. For this inbound operation, two ten-station hold annunciator masters are provided. Back over the local annunciator comes the voice of a checker with the dock or hold space to which the pallet should be moved.

The stripper marks this spot in chalk on the shipment, then switches on a red light over the door. This indicates to the operators of a fleet of "roving" lift trucks that a load is awaiting. The truck comes and moves the shipment direct to the spot marked; then the operator looks for another red light.

Truck terminals, of course, have the same function as railroad freight stations—to transfer individual pieces between vehicles. But over-the-road truck lines have the further requirement—if they are to make money—of loading trailers scientifically so that each move carries the maximum payload the law allows on the highways and on the axles in the proportions specified by the law. Thus on a two-axle tandem trailer, 5,000 lb. might be allowed in the front third, 15,000 lb. in the middle third, and 10,000 lb. in the rear third. A trailer must be built up gradually to make certain that the cube doesn't push out too many pounds.

This difficult job is not left to the platform men at the new Mid-States terminal. The central checkers order shipments to be moved to outgoing door locations in order as they want them loaded into the trailers. If this cannot be done, the pallet is ordered moved to a particular "hold spot" on the floor, clearly divided by painted lines into sections identified by combinations of letters and numerals. Here it will lie until the checkers see, from their desk "build-ups," a place for it on the right trailer, whereupon a fork-lift operator is directed by loudspeaker to pick up the shipment and set it off at the proper outgoing doorway. Complete records of the location of every pallet load on these central floor holding spots are kept by the checkers, and lift truck operators need check only the spot and the number of pieces.

Since freight is delivered at loading bays in the order desired, loaders merely place the shipments in the trailers as received; they make no effort to check the freight. It is assumed that if it is at hand it is to be loaded.

The essence of central checking at Mid-States terminal is that all records, bills and supporting papers are kept at one point, under constant surveillance, amidst the best possible physical conditions. Centralization achieves "blind checking," which is claimed virtually to eliminate errors.

SOVIET RAILROADS SINCE 1940

"The Fourth Five-Year Plan (FYP) referred in strong terms to the high priority of railroad reconstruction, and allocated to the railroads 16 per cent of the total funds intended for capital investment during 1946-50 . . . . These funds were to finance an ambitious program of reconstruction and expansion. Its dimensions are indicated by data showing the state of the network at the end of 1945, and the targets for 1950:

Characteristics of Line in Operation, U.S.S.R. Railroads, 1945, and Plan, 1950, in kilometers

	End of 1945	To be restored	To be built	Plan 1950
First main tracks	112,868	3,758	7,230	123,200
Second tracks	21,000	6,788	5712	33,500
Station tracks	47,504	(a)	8,296	55,800
Electrified line	2,038	(a)	5,325	7,363
Automatic block signaling	6,950	2,978	7,410	17,338

(a) Included in column one.

"Almost all new construction in the present FYP is designed to create shorter inter-regional connections between important industrial centers, primarily east of the Volga. The most important project in the eyes of the government is a series of lines which will create a second artery parallel to, and south of, the western end of the existing Siberian trunk line. . . .

"The time required per freight car trip is still appreciably above the 1940 level, and in fact is back at a pre-1935 level. The drive to keep each freight car constantly in use leads to great pressure on clients for prompt loading and unloading. This practice is one of the characteristics which most distinguishes the Soviet railroad system from others, where the supply of rolling stock relative to normal traffic requirements is more ample.

"The number of freight cars in use in 1945 was not far below 1940, and by 1947 the prewar average number had been exceeded. It follows that availability of freight cars has not been a check on transport capacity since the war. Rather, limits on freight traffic have been imposed by slow turnaround time, by incompletely repaired or disorganized line sections and terminal facilities, and in particular cases perhaps, even by lack of traffic.

"There seems little doubt, on the basis of progress to date, that the traffic targets of the Fourth FYP will be overfulfilled this year. The three freight measures will not stand in the relationship envisaged for them in 1946, unless average length of haul drops substantially, but the capacity of the railroad system to carry the traffic expected of it since the war seems to have been demonstrated.

"It appears from the sizeable additions to the number of freight cars in use that both the builders of new cars and the repair shops reconditioning old cars deserve considerable credit for the railroads' performance. Had these additional cars not been available, the railroads' lagging in reducing turnaround time would have prevented them from carrying the traffic they have. There is still an appreciable distance between the 1949 average turnaround time of 8.08 days, and the 6.79 days attained in 1936. It will be interesting to see what target for 1955 is thought to be attainable in this respect.

"The construction program, unless remarkable feats are performed this year, will be considerably underfulfilled. It is worth remembering, however, that building railroad lines is a lengthy process.

"Looking further into the future, the prospects for Soviet railroads are perhaps easier to discern. In the decade before World War II, the U.S.S.R. presented the peculiar sight of an economy industrializing with relatively little building of railroads. With the benefit of hind-sight, we can now see that the decision to concentrate resources on heavy industry, rather than railroad building, bore fruit. The resources diverted from railroad building in these years helped win World War II.

"Soviet transport writers have argued that the railroad networks of some capitalist countries, and in particular the United States, are overbuilt, having developed before the advent of truck and bus transportation. The Soviet Union asserts that it will not make the same mistake, and that road carriers will be developed simultaneously, in a unified transport system without competitive duplication. While this argument may gloss the decision to minimize railroad construction, reached on other grounds, it is likely to be withdrawn whenever the general pressure to channel resources into defense industries is relaxed. Road transport is not yet an appreciable factor in Soviet transportation, and its development is likely to be slow. It cannot substitute for rail transport in the movement of mass raw materials, the traffic on which an industrialized economy depends.

"Inspecting a map of the Soviet railroad network, one cannot but be struck by the broad empty spaces stretching across the whole country east of the Volga. Perhaps the density of activity in these regions will never justify a rail system as filled-out as that of the west. Nevertheless, it can reasonably be expected that future Plans will envisage many thousands of kilometers of new construction.

"The Soviet economy may prove to be one in which railroad building is renewed on a large scale after a period of intensive development of heavy industry. Having inherited the elements of a railroad system, the government has so far been able to build up industry without doing more than strengthen its rail network. In the coming decades, large-scale additions seem inevitable, barring technological developments in transportation which cannot now be foreseen."

An abstract of an article by Holland Hunter, professor of economics at Haverford College, Haverford, Pa., in Bulletin No. 4 on Soviet Economic Development, published by the University of Birmingham, Birmingham, England, September, 1950.

Freight Traffic, U.S.S.R. Railroads, 1940-50, by Year

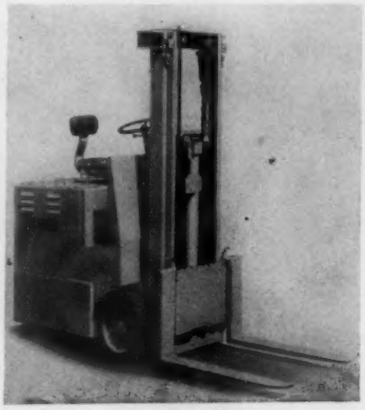
	1940	1941*	1942	1943	1944	1945	1946	1947	1948	1949	Plan 1950
Total Freight Carried											
Billions of metric ton-kilometers	415	460	223	252	307	314	338	354	450	525	532
1940=100	100	110.8	53.7	60.7	74.0	75.7	81.4	85.3	108.4	126.5	128.2
Average length of haul (kilometers)	700	693	823	851	830	794	743	710	743	737	690
Total Freight Originated											
Millions of metric-tons	592.6	664	271	296	370	395	455	499	606	712	771
1940=100	100	112.0	45.7	49.9	62.4	66.7	76.8	84.2	102.3	120.1	130.1
Average net load per car (tons)	16.59	17.0	17.4	17.8	18.3	17.51	17.94	17.94	18.25	18.50	18.37
Average Daily Car Loadings											
Thousands of cars (2-axle units)	97,852	106,958	42,600	45,500	55,400	61,800	69,500	76,200	90,900	105,400	115,000
1940=100	100	109.3	43.5	46.5	56.6	63.2	71.0	77.9	92.9	107.7	117.5

*First half year only, at annual rates.

New and Improved Products of the Manufacturers

MERCURY JEEP FORK TRUCK

A 2,000-lb. capacity fork truck, which features maximum fork elevation of 130 in. activated by a single cylinder low pressure hydraulic lift, has just been announced by the Mer-



cury Manufacturing Company, 4044 S. Halstead st., Chicago 9. The Jeep Model 230, as this unit is called, has a turning radius of 60 in. It is 95½ in. long (including 36 in. forks), 83 in. high and 36 in. wide. Weight is 5,200 lb. New operating features include inclined automotive steering and foot pedal acceleration.

COMMONWEALTH B-X TYPE TRUCK

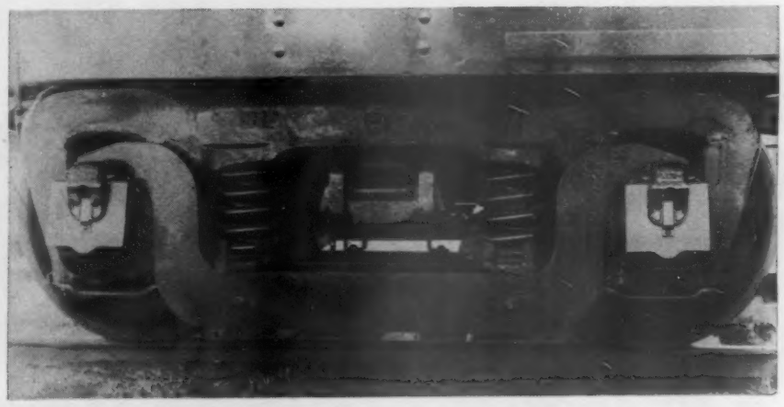
The General Steel Castings Corporation has recently developed a four-wheel B-X type truck for commodity cars operating in passenger service. This truck differs from the freight-car type truck used on many box-express cars in that it is equalized and the bolster is supported in swing hangers. The design has been simplified, however, so that the wheel base is no longer than that of a standard freight-car truck.

The one-piece cast-steel truck frame, with cross transoms and pedestals machined integral, holds the axles in tram. The swing-hanger-supported bolster provides lateral control. The separate equalizers and increased spring capacity result in less damage to car contents, car body, and trucks. The combination of the swing motion and equalizers lessens the probability of derailment. The truck may be arranged either for clasp brakes or the single-shoe type of brake and either for roller or plain bearings. It is also arranged for the locking center pin so that in case of derailment the truck remains attached to the car in accordance with passenger-car practice.

This truck is now in service on sev-

PLYMOUTH INDUSTRIAL LOCOMOTIVE with hood doors open, showing the engine and hydraulic torque converter installation, which transmits power smoothly and continuously without interruption for gear shifting. It is available on all locomotives built by the Plymouth Locomotive Works division of the Fate-Root-Heath Company, located at Plymouth, Ohio

Commonwealth four-wheel B-X truck equipped with roller bearings and clasp brakes



The four-wheel box-express truck equipped with single-shoe brakes

eral railroads, including the Pennsylvania, the Missouri Pacific and the Baltimore & Ohio, where it is said to have demonstrated its advantages in recent tests.

SWEEPING MACHINE

A power sweeper specially designed for fast sweeping of station platforms, ramps, waiting rooms, shop floors, and similar areas, has been developed by the G. H. Tennant Company, Minneapolis, Minn. Although less than 29 in. wide, and operated by one man, the machine is reported to have a sweeping capacity of more than 43,500 sq. ft. per hour.

For sweeping, the unit incorporates a combination brush and vacuum system. A brush, 24 in. wide, revolves inside a sealed compartment and hurls dirt and debris into an inclosed, built-in, "floating" type hopper. At the same time a vacuum fan draws dust into a heavy fabric bag.

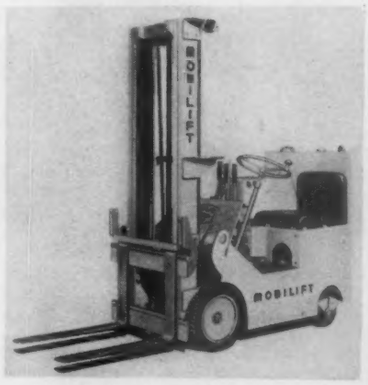
The machine, driven by a 4.4-hp. air-cooled engine, is equipped with a two-speed transmission permitting speeds up to 8 m.p.h. for open areas and as low as 2 m.p.h. for safe handling in narrow aisles or in crowded areas. Its sweeping action is said to be as efficient at low speed as at higher speeds. The unit also has a reverse gear.

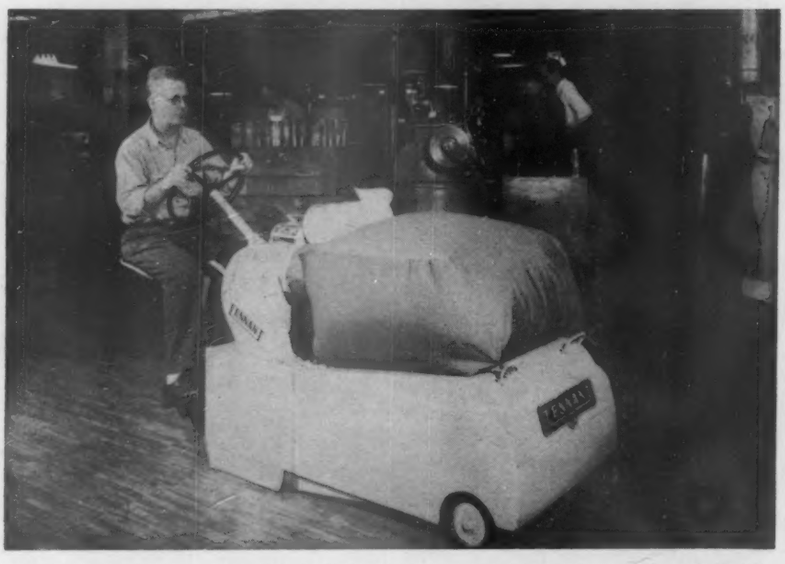
In operating the machine the operator lowers the brush with a foot pedal, shifts to high or low, and presses the accelerator pedal. A centrifugal-type automatic clutch engages when the engine reaches a preset speed. The sweeper is equipped with front-wheel automobile-type steering, both foot and parking brakes, and sealed ball and roller bearings throughout. Various types of brushes are available.

MOBILIFT LINE ADDITIONS

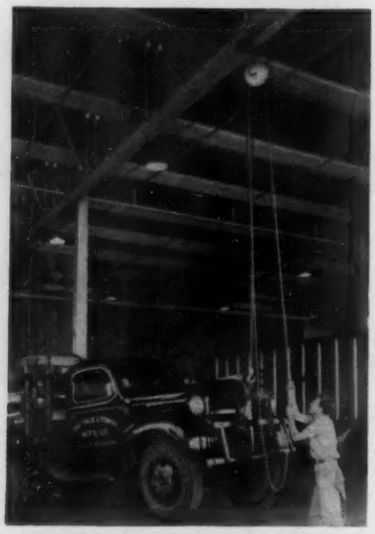
Two additions to its line of materials handling equipment were made recently by the Mobilift Corporation, Portland, Ore., when the company announced production of its Models E (stand up) and ER (sit down), 2,000-lb. capacity fork trucks. Both trucks feature Mobilift's Lev-R-Matic controls and a new 3-cylinder, air-cooled engine. This power plant is governed at 2,500 r.p.m.

The ER model has "Mobil-Spring Suspension" knee-action rear wheels, i.e., each rear wheel is independently sprung, through use of a heavy duty spring and an airplane-type shock absorber. This new knee-action feature, the manufacturer maintains, will decrease both operator fatigue and maintenance costs.





The Tennant power sweeper is reported to have a sweeping capacity of 43,500 sq. ft. of area per hour



A one-ton capacity chain hoist in action. Efficiency of these units is said to be 95 per cent, enabling one worker to lift 1,000 lb. 3 ft. in 20 sec.

LIGHTWEIGHT HAND HOIST

A line of lightweight hand chain hoists in capacities ranging, in half-ton jumps, between ½ ton and 2 tons was recently brought out by the Philadelphia Division of Yale & Towne Manufacturing Company, 11000 Roosevelt blvd., Philadelphia 15, Pa. Yale states that these hoists weigh only one-half as much as conventional hoists of the same capacity. (The ½-ton capacity model is said to weigh 37 lb.)

High strength aluminum castings, alloy steel and fewer parts have combined to make these units so light, the manufacturer states. Chain and sheaves are of heat-treated alloy steel. All rotary shafts have ball bearings.

A new load brake, "Synchromatic," provides fast automatic braking when hoisting or lowering. Balanced and cushioned springs which force engagement of a six-tooth pawl and a 24-tooth ratchet are said to assure positive, immediate braking action without any harmful side pressure on bearings. A stabilizer ring speeds brake release for precise inching when lowering a load.

All models are provided with chain for a standard lift of 8 ft. Other lifts and chain lengths are available.

GENERAL NEWS

I.C.C. Indicates Concern About Impact Of Long-Haul Trucking on the Railroads

Disapproves proposed acquisition of Keeshin by P.I.E.; Mahaffie, the lone dissenter, sees majority embarked on "dubious policy"

In a decision which reflected its concern about the impact of long-haul trucking on the railroads' ability to maintain essential services and facilities, the Interstate Commerce Commission has disapproved the proposed acquisition of Keeshin Freight Lines by Pacific Intermountain Express Company. Thus the commission has rejected the recommendations of a proposed report by Examiner Irving J. Raley (*Railway Age* of June 3, page 46), who would have approved the involved applications, thereby sanctioning the creation of a new transcontinental trucking system.

"Transcontinental traffic, including the commodities most susceptible to motor truck competition, when moving in large volume, can be transported more economically by rail than by motor carrier," the commission's report said. "The record indicates that this would still be true for hauls at distances much less than coast to coast. To the extent inroads are made by motor carriers on this type of traffic, the volume available for mass transportation by railroads will be reduced, and the advantage of rail transportation in this field would eventually be undermined.

"The cumulative effect of the loss of such traffic to motor carriers would necessarily be felt by the railroads, and would impair, not only their service on commodities which motor carriers normally solicit, but also on commodities which must necessarily be transported by rail. The shipping public would suffer from a decrease in rail service and it would be faced with demands for increased rates on commodities which must move by rail. In the administration of the national transportation policy the inherent advantages of rail transportation on volume movements of transcontinental traffic must be preserved."

Nine-to-One Decision

While the majority report announced a 9-to-1 decision, it carried notations stating that Commissioners Rogers, Patterson, and Cross concurred only "in the result," and that Commissioner Knudson's "concurring opinion will be released later." Commissioner Mitchell did not participate, while Commissioner Mahaffie was the dissenter. His dissenting opinion said the majority had embarked upon what seemed to him to be "a dubious policy of attempting to afford regulatory protection to the railroad industry generally at the sacrifice of improved motor carrier service. . ."

The case, docketed as No.MC-F-4401, is one of 43 pending proceedings on which 90 railroads had asked the commission to defer action for the purpose of conducting a general investigation of "long-haul" highway transportation. The commission has not yet acted on that railroad petition which was filed last April, nor on a like petition filed earlier by 16 organizations interested in the grain trade. (See *Railway Age* of April 15, page 65, and May 6, page 54.)

26,000-Mi. System

Meanwhile, a group of railroads, and grain and other shipper interests, were protestants in the present case, as were several motor carriers which might be adversely affected by the proposed acquisition. Commission approval of the proposal would have joined truckers operating over a total of more than 26,000 route miles.

P.I.E., which would have acquired the Keeshin system for a payment of about $1,940,000 and the assumption of various Keeshin obligations, now operates 10,513 miles of routes extending from San Francisco, Calif., and Los Angeles, on the west, to Chicago and St. Louis, Mo., on the east, generally via Salt Lake City, Utah, Denver, Colo., and Kansas City, Mo. Its 1949 gross revenue was about $14,000,000. The Keeshin system, which went bankrupt and is now operated by trustees, covers 15,560 miles of routes. It extends generally from Minneapolis-St. Paul, Minn., Des Moines, Iowa, and St. Louis, Mo., on the west, through the central states north of the Ohio river to points in northeastern states between Boston, Mass., and Washington, D. C. During 1948, the system had gross revenues of about $10,000,000.

The railroad protestants did not make much of the prospective loss of traffic to individual roads, the commission said. It added that they viewed the proposed acquisition "in the total effect which would be generated by approval, including the precedent for establishment of additional transcontinental motor carrier systems." The railroads also referred to the other pending applications listed in their petition seeking a general investigation. While the commission noted that those other applications "are not in issue here," it did "agree that the broad aspects of approval of this transaction must be considered."

Among other railroad arguments were contentions, as summarized by the commission, that "'specialist' motor carriers, such as P.I.E., carry only higher-rated commodities between principal commercial centers; that such motor carriers can take enough of this traffic from the railroads to cripple them seriously . . . but cannot replace the railroads as carriers of all commodities. . ." The railroad industry, it was emphasized, is the "only general practitioner" in the transportation business; and it was argued that "the national transportation policy requires preservation of the railroads to meet the needs of national defense." That the commission agreed with this view was indicated in discussions leading up to its findings.

"The soundness of the argument of the railroads that their financial strength and potential for expansion to meet the needs of national defense must be preserved is beyond question," the report said. It is "apparent," it added, "that neither normal needs nor emergency needs can be met by other modes of transportation alone; nor can these needs continue to be met by the railroads, with other modes of transportation, unless the railroads can continue to receive a sufficient traffic volume to maintain their plants and services."

Effect on Other Carriers

The commission went on to list truck transportation's "inherent advantages," such as routes more direct than rail between some points, flexibility of service, faster service on small shipments, etc. "The evidence indicates," the report added, "that these advantages decrease in importance, compared with rail transportation, as the length of the haul and the size of the shipment increase. The applicants have not shown that these advantages of motor transportation would be applicable to the long-distance inter-regional and transcontinental service proposed by P.I.E." The prospective impact on the protesting motor carriers was also a major factor in the commission's adverse ruling. "We find," it said, "that the effect of what is here proposed goes beyond a mere unification. . . . There has been no appreciable amount of traffic interchanged between P.I.E. and the Keeshin companies. To the extent that P.I.E. would institute a single-line, single-ownership, through operation between

points now served by it and points now served by the Keeshin companies, it would be a new competitive service, not distinguishable, to this extent, from an extension of its service through securing new operating authority. . . ."

Dissenter Mahaffie asserted with citations that the commission has heretofore "encouraged unifications." The present decision, as he sees it, marks a "change of policy" which "seems to result from the fear that the railroads will be unable effectively to meet the competition which the single ownership of these properties by P.I.E. would afford." Such "fear," in Mr. Mahaffie's opinion, "is not justified by the record." Even if it were, he added, "it should not be allowed to determine the issue in this proceeding."

The dissenting commissioner went on to condemn "the theory that the growth of one type of carrier must be restricted lest another presently handling the traffic be injured." As he sees it, such a theory is "not only legally unsound but is, from a transportation standpoint, dangerous." If followed over the years. it "would have greatly retarded the development even of the railroads themselves, in whose behalf it is now invoked," Mr Mahaffie continued.

He was "unable to reconcile the decision" with the national transportation policy, under which "no type of carrier is to be preferred." And he was "not convinced that the substitution of our regulatory protection to the railroads in lieu of free competition between the two modes of transportation is in the public interest, or that the prevention of the further natural growth of the motor-carrier industry through consolidation of existing operations will materially assist the railroads in retaining traffic to their lines."

The commission has before it proposed reports in two of the other proceedings which the railroads listed in their petition seeking a general investigation. In No. MC-110325, Examiner Warder Rannells has recommended that the commission deny an application wherein Transcon Lines is seeking authority to operate common-carrier trucking services over routes between points in California, Arizona and New Mexico, and points on the eastern seaboard. In No. MC-25567 (Sub-No. 22), Examiner R. Edwin Brady has recommended that the commission authorize Hancock-Trucking, Inc., to establish common-carrier services over routes between Evansville, Ind., and Los Angeles, Calif., and between Henderson, Ky., and New Orleans, La.

—From "Railroad Humor" compiled by the St. Louis Southwestern

"Scope of Reed-Bulwinkle Act Must Be Defined," Attorney General McGrath Tells Practitioners

Administration of I.C.C., cost finding in rate cases, also debated at two-day convention held at St. Louis on November 9 and 10

Serious questions remain to be resolved as to the scope of the Reed-Bulwinkle Act and as to the interpretation of several of its provisions, United States Attorney General J. Howard McGrath warned some 250 members of the Association of Interstate Commerce Commission Practitioners at the 21st annual meeting of that organization held in St. Louis, Mo., November 9 and 10. The attorney general's address was the highlight of a business-packed schedule that included talks by G. Lloyd Wilson, professor of transportation at the University of Pennsylvania, who reviewed some of the major problems facing the transportation industry today, and by Benjamin Miller, representing the Defense Transportation Administration, who discussed the emergency manpower situation and its effect upon transportation.

The address by the department of justice head followed a luncheon at the Jefferson Hotel scheduled by Roland Rice, outgoing president of the I.C.C.P., in cooperation with the St. Louis and Kansas City chapters of the association and the St. Louis Traffic Club. President Rice placed the membership of the organization at 3,400, scattered throughout the country in some 17 chapters. E. L. Williams, chairman of the St. Louis chapter, presided at the luncheon and introduced the attorney general, who spoke at length about the work of his department in fields in which I.C.C. practitioners are directly concerned.

Touching upon the Reed-Bulwinkle Law recently enacted, the attorney general asserted the time has come for the law to be "interpreted and applied." Early settlement of questions as to the scope of the Reed-Bulwinkle Act "is also of prime importance in defining the area in the field of transportation to which Congress intended the antitrust laws to apply," Mr. McGrath asserted.

"Commission Needs Single Head"

The department of justice is looking forward to some decision by the I.C.C. with reference to the reparations cases in the near future, Mr. McGrath indicated, saying "I understand that all evidence has been submitted by the government as well as by the railroads in five of the cases and that steady progress is being made in submission of evidence in the remaining 12."

Following the luncheon, Clyde B. Aitchison, dean of I.C. Commissioners, participated in a spirited discussion of ways and means of improving administrative efficiency of the I.C.C. He was the elusive target of criticism leveled at the commission in a question and answer period led by Washington attorney Wilbur LaRoe, Jr., former president of the I.C.C. Practitioners. "The commission does not handle the administering of its affairs with the efficiency which the importance of its labors deserves," Mr. LaRoe asserted, and charged that the lack of a single administrative head delayed and complicated all matters that came before it. Granting that "stingy Congressional appropriations" made it difficult to attract the calibre of men needed to administer the affairs of the commission efficiently, he "ventured to suggest" there was much merit in Commissioner Meyers' proposal of "a reduction of the commission from 11 members to 7 or even 5," and the "surrender of administrative authority to a competent administrative expert."

Cost Finding in Rate Cases

Vying with the attorney general's address as the high point of the two-day conclave was an open forum discussion of cost finding in rate cases which developed a wide divergence of views and drew the caustic comment of President-elect John R. Turney, one-time vice-president of the St. Louis Southwestern and now a practicing attorney in Washington, that "the 'out-of-pocket cost' theory in rate making is responsible for the out-of-pocket condition of the carriers today!" Moderator of the panel discussion was Arthur H. Schwietert, traffic director of the Chicago Association of Commerce & Industry. Panel members were Dr. Ford K. Edwards, director of the Bureau of Coal Economics, National Coal Association; E. S. Root, chief of research, Erie; Mr. Turney, and Gilbert J. Parr, director, cost and research, Waterman Steamship Corporation.

Dr. Edwards told the forum group that substantial progress had been made in recent years both by the carriers and the commission's staff in assembling helpful data. "On the demand side," he pointed out, however, "the formal presentations and analyses are often conspicuous by their inadequacies. At the same time there is no doubt but that as a result of long,

intimate contact with the problem, and much experimentation, the rate makers have built a structure which goes a long way toward reflecting major differences in the elasticities of demand. Recent commission studies of the distribution of the 'burden' furnish ample evidence in this respect."

Mr. Root said the danger in most cost studies lay in the use of inadequate, incomplete or obsolete statistics rather than in methods. Outlining briefly certain general principles which he thought had gained wide acceptance, he said: "We can all agree that the out-of-pocket cost should be the floor for rates . . . That in seeking adjustments of individual rates or particular groups of rates, knowledge of the out-of-pocket cost is important, and it is desirable to include an apportionment of constant costs. . . . That when the entire rate structure is under review, such as in Ex Parte cases 162-166 and 168, the question is primarily whether the rates cover all costs and yield a fair return. Finally, cost of service is only one element in rate making. It is not a substitute method."

Mr. Turney here opposed the theories advocated by Messrs. Edwards and Root, and emphasized that "the use of costs in rate making is as dangerous as it is essential," while granting that these discussions did serve to "narrow the area of disagreement."

Representing water carriers on the cost finding panel, Mr. Parr said: "First, I am of the opinion that the cost for each agency involved in a rate proceeding should be introduced so that the regulatory bodies and others may be informed as to the economy and fitness of the various transport agencies to handle the traffic. Secondly, I think that both out-of-pocket and fully distributed costs should be introduced, as both are useful in helping to judge the compensatory level of a rate and the relative contribution made by the traffic to the carrier's overhead burden. Thirdly, I feel that in order to make the costs as useful as possible, it is necessary to supplement them with economic data dealing with the volume of movement, the value of the commodity, market and carrier competition, and the effect which the rate itself may have upon the movement of the traffic and the carrier's earnings. I feel that only in this manner can an intelligent disposition of all the issues in a proceeding be made."

New Officers

Carl Giessow, director of the Transportation Bureau of the St. Louis Chamber of Commerce, acted as toastmaster at the annual dinner of the association, held in the Jefferson Hotel on November 9. The morning of November 10 was given over to special committee meetings, followed by election of officers for 1950-51. The new officers are: President, Mr. Turney; secretary, J. K. Hiltner, general traffic manager, United States Pipe & Foundry Co., Burlington, N. J.; treasurer, Charles E. Bell, Washington, D. C. The following were named vice-presidents for various districts of the association: No. 2—S. S. Eisen, attorney, New York; No. 4—Frank H. Cole, Jr., assistant general counsel, Baltimore & Ohio, Cincinnati, Ohio; No. 6—Paul H. Hardin, general traffic manager, Coca-Cola Company, Atlanta, Ga.; No. 8—Mr. Schwietert; No. 10—Ernest Porter, commerce counsel, state of Iowa, Des Moines, Iowa; No. 12—Frank A. Leffingwell, Dallas, Tex.; No. 14—I. N. Early, traffic manager, Billings Traffic Bureau, Billings, Mont.; No. 16—Howard G. Freas, Public Utilities Commission of California, San Francisco, Cal.

Wages Top Revenue In Baggage Service

I.C.C. bureau's "Comment" analyzes results for 1949

A study of the cost of providing baggage service on Class I roads in 1949, indicating that wages alone were more than seven times the revenue received, was included in the latest issue of the "Monthly Comment," regular publication of the Interstate Commerce Commission's Bureau of Transport Economics and Statistics.

The article on baggage service, which showed that revenue in 1949 was $2.9 million while wages totaled $22.2 million, appeared in the "Comment" along with others covering railroad financial results for the first nine months of 1950. There was also an article on railroad net corporate working capital, while other articles discussed the increased use of heavy track rail since 1939, and analyzed intercity passenger traffic for 1949.

Referring to the "substantial and increasing annual losses" from baggage service, the bureau said revenues fell 21.4 per cent from 1945 through 1949. During the same period wages rose 44 per cent; and by last year the total revenue amounted to only 13.2 per cent of the wage costs.

Losses incurred in maintaining baggage service may well be relatively larger than those resulting from either mail or express service, the bureau said. It pointed out that wage losses are not the whole story, and that other items chargeable to baggage service include maintenance costs, repair and depreciation on baggage cars and combination cars having baggage space, the cost of hauling and switching these cars, and the cost of maintaining baggage room space. Actual amounts involved in these items cannot be determined from available statistics, the bureau said.

The 1950 financial results, contained in this issue, covered the first nine months of the year and made comparisons with like periods in 1949 and 1948. Net income after all charges has reached $465 million for 1950, as compared to $279 million in 1949 and $504.6 million in 1948. Net railway operating income for the current year stands 37.3 per cent above that of last year, but is still 8.5 per cent under the 1948 figure.

"Federal income tax accruals increased from $200.6 million in the 1949 period to $342.3 million in 1950 or 70.6 per cent," the bureau said. This increase reflects both increased earnings and accruals for the 1950 increase in income tax rates. The bureau noted that accruals in the 1950 period were 6.3 per cent higher than in 1948.

Discussing operating revenues for the first nine months, the bureau said freight revenue was up 5.7 per cent over 1949, while passenger revenue declined 8.9 per cent. Freight revenue in 1950 has increased in all districts and regions, and passenger revenue has declined in all areas. Total revenue for the 1950 period was placed at $6,757.7 million, an increase of 3.8 per cent over that of last year.

Working Capital

Net corporate working capital, i.e., total current assets less total current liabilities, for all Class I roads combined increased in the past year, marking the first such increase since 1945. According to the bureau's figures, this item went up 15.5 per cent (from $1.3 million to $1.5 million) between August 31, 1949, and August 31, 1950. "Quick assets," i.e., cash plus temporary cash investments, also increased for the first time since 1945, going up from $1,599.7 million to $1,900.9 million or 18.8 per cent.

On August 31, 1950, the "quick assets" of Class I roads as a whole were sufficient to cover 96 per cent of the total current liabilities. A year earlier the corresponding percentage was 84.9, the bureau said. During the year there

Volume of intercity passenger traffic in passenger-miles by kinds of transportation, Years 1948-1949

Transport Agency	Passenger-miles (millions) 1948	1949[1]	Percent of change 1949 vs. 1948	Percent of annual total 1948	1949
1. Railways, steam and electric	41,894	35,718	−14.7	11.62	7.98
2. Highways:					
Motor carriers of passengers	23,529	21,151	−10.1	6.53	4.73
Private automobiles	287,423	382,735	+33.2	79.74	85.52
3. Inland waterways, including Great Lakes	1,670	1,179	−29.4	.46	.26
4. Airways (domestic revenue service)	5,941	6,761	+13.8	1.65	1.51
Grand total	360,457	447,564	+24.2	100.00	100.00

[1]Preliminary estimates.

A DRAMATIC HIGHLIGHT of "Frisco Day" and the dedication of the St. Louis-San Francisco's new shops and yard at Springfield, Mo., came when these diesel passenger and freight locomotives burst through paper-covered shop entrances following a dedicatory address by the road's president, Clark Hungerford. The formal dedication of the new facilities, put into use several months ago, was described on page 94 of the *Railway Age* of November 11

had been increases in all territories, ranging from $4.3 million in Pocahontas region to $154.1 million in eastern district.

The net corporate working capital figures shown above include materials and supplies, but if the latter are excluded the increase in the past year rises from 15.5 per cent to 63.2 per cent. With materials and supplies excluded, the percentages of increase in net corporate working capital varied greatly by territories. This range of increase was from 20.5 per cent in the south to 299.7 per cent in Pocahontas region.

Heavier Rail

Turning to its article on the increased use of heavy track rail, the bureau said that during the period between 1939 and 1949 Class I roads replaced large quantities of main track rails with those of heavier weights. The average weight of rail per yard in all main tracks increased from 94.7 pounds to 101.37 pounds in the 10-year period.

At the beginning of the period 40.33 per cent of the main track mileage was laid with rail weighing 100 or more pounds per yard. By the end of 1949 the percentage had risen to 54.59. The bureau directed particular attention to the increase of 17,422-mi. in track laid with 110 to 114-lb. rail, and to the increase of 16,584-mi. in the 130 to 139-lb. class. The total mileage for these two weight groups was about one-third of all main track mileage at the close of 1949, the bureau said.

The accompanying table, reproduced from the "Comment," was included in the bureau's discussion of 1949 intercity passenger traffic. The bureau noted that total 1949 passenger-miles increased 24.2 per cent over 1948, but among the various transport agencies only private automobiles and the air lines showed increases. Railroads handled only 7.98 per cent of the estimated total passenger-miles in 1949. This was a decrease of 14.7 per cent below 1948, when the railroads accounted for 11.62 per cent of all passenger-miles.

Other articles appearing in the "Comment" noted, among other things, freight forwarder returns for the first half of 1950. Compared to the like 1949 period, the forwarders showed an increase in total net income of 640 per cent, their net having gone up from $242,790 to $1,797,516. Meanwhile, the rail proportion of total transportation purchased by forwarders dropped off from 70 per cent in 1949 to 68.6 per cent in 1950. The motor carrier proportion also declined slightly, but the amount of water transportation purchased by forwarders went up 105.4 per cent. The bureau noted, however, that this gain by water carriers involved only a small percentage of the total purchased transportation.

Knudson Would Carry On "Business as Usual"

Transport agencies can carry on "a large segment of business as usual" so long as they don't adopt "too much of the attitude of business as usual," Defense Transport Administrator James K. Knudson said in addressing a November 8 meeting of the Traffic Club of Washington, D. C. Mr. Knudson anticipated that there will be "stresses and strains," but added that his counsel "as of the moment" is that there is "no need for any unwarranted hysteria."

The D.T.A. administrator went on to urge that all interested parties resolve to "lighten the burden" by continuing to maintain "high morale and good manners." As to D.T.A., Mr. Knudson said it will be his purpose to set up that agency and administer it in much the same way that the former Office of Defense Transportation was operated.

The D.T.A. organization, he continued, will not be large. He expects to have no more than "25 or 30" on the Washington staff, while field operations will involve adding about 40 employees to the staff of the Interstate Commerce Commission's Bureau of Service. It is Mr. Knudson's role as the member of the I.C.C. to whom the Bureau of Service reports that makes him administrator of D.T.A.

In other parts of his address, Mr. Knudson contrasted the government-operation policy of World War I with the World War II set-up. The latter, which involved "private operation under government controls," was proved by experience to be the "best way," the D.T.A. administrator asserted. He also said that creation of D.T.A. was necessary at this time because the I.C.C.'s statutory powers were not adequate to deal with all situations.

Mr. Knudson was introduced by E. F. Lacey, executive secretary of the National Industrial Traffic League, who is chairman of the club's speakers committee. Club President F. G. McGann, who is general agent of the New York Central, presided at the meeting.

Myers, Donnell Won't Be in the New Senate

Last week's elections resulted in defeats for Senator Myers, Democrat of Pennsylvania, and Senator Donnell, Republican of Missouri. Senator Myers, the Senate's Democratic whip, has also been chairman of the interstate and foreign commerce subcommittee which is making a comprehensive study of domestic land and water transportation; and Senator Donnell is sponsor of the so-called anti-strike bill, S.3463, to outlaw strikes or lockouts arising out of disputes within the purview of the Railway Labor Act.

Senator Donnell has been a member of the Senate committee on labor and public welfare. That committee's chairman—Senator Thomas, Democrat of Utah—was also defeated. Senator Murray, Democrat of Montana, is in line for the chairmanship.

Meanwhile, Senator Johnson, Democrat of Colorado, will continue as chairman of the committee on interstate and foreign commerce. His seat was not involved in the election, his term not having expired. Senator Myers was the only member of this committee to be defeated. Other members whose seats were involved won reelection. They are Senators McMahon of Connecticut and Magnuson of Washington, Democrats, and Tobey

of New Hampshire and Capehart of Indiana, Republicans.

Because of Republican gains, there will perhaps be a change in the division of committee memberships in the new Congress. Senate committees now consist of eight Democrats and five Republicans, while House committees consist of 17 Democrats and 11 Republicans.

As to the House committee on interstate and foreign commerce, its chairman—Representative Crosser, Democrat of Ohio—was reelected. Three of its other Democratic members were defeated in the election. They are Representatives Biemiller of Wisconsin, Wilson of Oklahoma, and Linehan of Illinois. Another member, Representative Sadowski, Democrat of Michigan, had previously been defeated in a primary contest for renomination, while a fifth vacancy was created by the death of Representative Bulwinkle, Democrat of North Carolina. All 11 Republican members of the House committee were reelected.

Among other highlights of the election were the defeat of the Senate's Democratic leader, Senator Lucas of Illinois, who lost to Everett M. Dirksen; and the victory in Ohio of Senator Taft, Republican, who was vigorously opposed by organized labor.

Acme Sets Up Overseas Air Cargo Service

On November 13 Acme Air Cargo, Inc., 2 Lafayette street, New York 7, an affiliate of Acme Fast Freight, inaugurated a trans-Atlantic air cargo service by which overseas shipments by air can be forwarded under a negotiable order waybill to more than a hundred destinations in Europe, Africa and Asia. A terminal to handle these shipments has been established at Pier 42, East river, New York, to which freight can be moved by any domestic air or surface carrier.

Cuts Non-Defense Use of Aluminum

Use of aluminum for non-defense purposes will be cut 35 per cent beginning with the first quarter of 1951 under Order M-7, issued November 13 by the National Production Administration. The order provides that users of aluminum may not use for non-defense purposes more than 65 per cent of their average quarterly use during the first six months of this year.

The reduction was delayed until January "to provide time for necessary adjustment," N.P.A.'s announcement of the cut said. It went on to note that, in December, users of aluminum "will be permitted 100 per cent of their average monthly consumption" during this year's first six months.

Exempt from the order will be persons using less than 1,000 lb. of aluminum a year. This is "to assist small business," as N.P.A. put it. Also, "pending development of requirements for the electric power industry," the order does not apply "to contracts placed prior to the date of the order for delivery before next April 1 of aluminum conductor cable, wire and bus bar for the production, transmission or distribution of electric energy."

Aluminum used for maintenance, repair and operating supplies is permitted at 100 per cent of the base period. As to inventories of aluminum, the order stipulates that they may not exceed 60 days supply, "or a practical minimum working inventory, whichever is less."

Car Surpluses and Shortages

Average daily freight car surpluses and shortages for the week ending November 11 were announced by the Association of American Railroads on November 16 as follows:

	Surplus	Shortage
Plain Box	0	15,451
Auto Box	27	238
Total Box	27	15,689
Gondola	19	5,551
Hopper	79	5,478
Covered Hopper	0	139
Stock	80	70
Flat	64	225
Refrigerator	3,891	10
Other	315	200
Total	4,475	27,362

RRs Set Records in 1950, Faricy Tells A.A.R. Meeting

Railroads have set new records in train loads and train speeds in 1950, William T. Faricy, president of the Association of American Railroads, said on November 17 at the organization's annual meeting in New York. As a result, Mr. Faricy added, the transportation output of the average freight train is at an all-time high. The job being done is equivalent to moving more than 20,000 tons of freight one mile in an hour, which is nearly 14 per cent above the peak output of the years of World War II and almost three times as much as it was 30 years ago.

Mr. Faricy reported that as a result of the program for increasing the transportation capacity of the railroads adopted at a special meeting of the A.A.R. on July 28 (see *Railway Age* of August 5, page 53), there are now more than 120,000 new freight cars on order, or three times the number on order on July 1. Moreover, the A.A.R. president continued, the number of cars awaiting repair has been reduced by 16 per cent. This has been accomplished by enlarging car repair forces and extending shop working time. "The railroads are keeping pace with current repair demands," Mr. Faricy said, "and at the same time are giving heavy repairs to or rebuilding 35,000 cars a month. This has reduced to less than 6 per cent of car ownership the accumulation of bad order cars which had grown up during the period of car surpluses in 1949 and early 1950, and further reductions will be made in the months ahead."

Pointing out that "demands of the national defense are being met currently, and will continue to be met as they develop," Mr. Faricy stated: "It has not been possible at all times to maintain a full car supply for all civilian traffic, but in October, which is probably the peak of the year's loadings, there was a smaller car shortage reported than in August. With the rising rate of construction of new cars, and continuing reduction in the number of cars needing repair, made possible through allocations of steel by the National Production Authority, there is every reason to believe that the situation will be further improved."

The annual report of the A.A.R. was released at the member road meeting. In its section of the report the Car Service Division pointed out that one of the ways by which the nation's freight car fleet can be made to produce more transportation service is by loading more freight into each car. "Heavier loading not only results in stretching the car supply during periods of car shortages, but it also means increased earnings per car handled, reduction in road-haul car-miles and in terminal switching, increased net tons per train and certain other savings to the carrier," the C.S.D. said. "Shippers and consignees share in the benefits through having a less number of cars to load or unload, with resultant savings in clerical work and, in some cases, savings in demurrage and accessorial charges."

"The field force of the division, along with other work programs, has given attention to possibilities for heavier loading, especially to commodities moving in volume in closed cars, where opportunity for increasing the tonnage per car is most frequently found. There has been a general response by shippers and consignees, with consequent substantial savings in the number of cars required to transport the tonnage. Continuation of these efforts will be an important part of the program of our

C. E. Denney to Retire From Northern Pacific

C. E. Denney will retire as president of the Northern Pacific on December 31, and will be succeeded by the road's present executive vice-president, Robert S. Macfarlane. Action on Mr. Denney's retirement and the election of Mr. Macfarlane came at a meeting of the company's board of directors and was announced at the road's St. Paul, Minn., headquarters.

Mr. Denney will continue to be associated with the N. P. as a director, and will serve in a consulting and advisory capacity from headquarters at the company's office at 630 Fifth avenue, New York.

field force in the year ahead." The division also anticipated that an additional 150,000 to 200,000 freight cars will be ordered by the end of 1951, or not later than the fall of 1952, under the program adopted by the July 28 special member road meeting, in order to insure delivery before the target date of July 1, 1953.

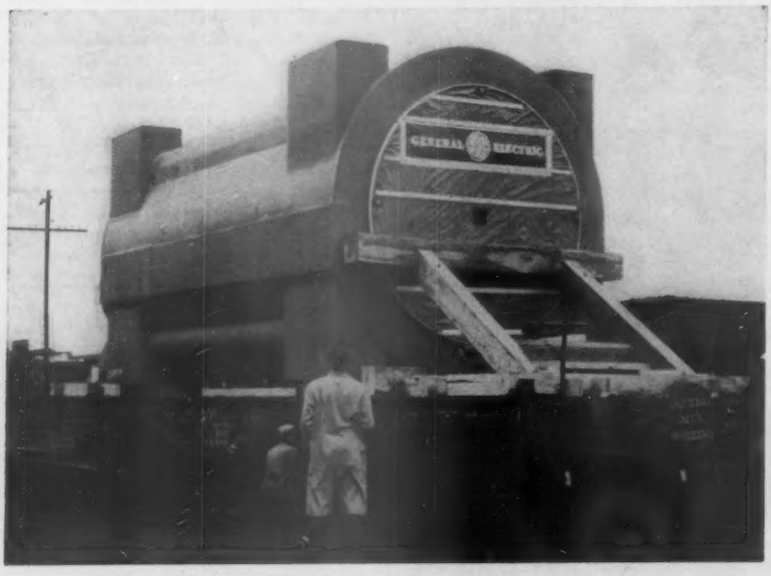
The Purchases and Stores Division reported the following projects as among those it had programmed for 1951: Give special attention to net profit to be derived from sorting and cutting operations of scrap and to keep scrap handling forces currently advised of sales prices of scrap; develop shipment of lumber in open top cars in unit loads in connection with mechanical handling; study savings possible through seasonal storage of fuel oil; collaborate in development of standard specifications for diesel lubricating oil; work toward increased branch warehouse stocks of diesel parts to reduce railroad inventory burdens; and consider further the proposed specifications for standard baggage wagons and material storage racks and trays.

"D. F." Cars in Production; 360 Ready by December 1

The General American-Evans Company of Detroit, Mich., has announced that an initial mass production run of 360 of the new "D.F." box cars (described in the *Railway Age* of May 13, page 48) which will be completed about December 1. The company said that the all-steel, 50-ft. cars were coming off of the assembly line at the rate of approximately 15 cars per day. As they are completed, the cars will be leased to those roads with whom General American-Evans has already negotiated leasing arrangements.

For the past 4 months the initial 25 cars have been in constant revenue operation on 8 different railroads. Coincident with the announcement of the building of the new cars, the company described the reactions of shippers and consignees to the performance of those cars already in service. It also told of the cars' performance revenue-wise based on records which the company has kept as their lessor.

According to these records, one of the cars earned $1,208 in less than 15 days while another earned $2,192 in a typical month and still another earned $1,902 in one month. The least productive car was one assigned to special service of one shipper who required its return from the destination empty. Making only one-way revenue trips, this car managed to earn over $500 per month. General American-Evans attributes the high earnings of the cars to a number of factors, among them being the cars' ability to double the average pay-load capacity and the relative speed with which they can be loaded and unloaded. The record showed that the "D.F." cars averaged more miles per day, and made more trips, than the average standard box car. Because the cars are leased to a road at less than $150 per month, and because the carrier need make no capital investment, the total gross profit in one case was over $1,000 for less than one month for one car, the company reported.



THIS STATOR for a 90,000-kw. generator weighs over 375,000 lb. and is the heaviest single piece of equipment ever shipped by the General Electric Company. Two 100-ton cranes were required to hoist the stator onto the flatcar. The car itself weighs 112,300 lb. and is one of only 14 such cars in the country capable of carrying the stator. From Schenectady, N. Y., to Yates, Ga., the stator's destination, the car traveled over the Delaware & Hudson, the Pennsylvania, the Norfolk & Western, the Winston-Salem Southbound, the Seaboard Air Line, the Southern and the Central of Georgia

Freight Car Loadings

Loadings of revenue freight in the week ended November 11 totaled 839,612 cars, the Association of American Railroads announced on November 16. This was a decrease of 22,572 cars, or 2.6 per cent, compared with the previous week; an increase of 203,789 cars, or 32.1 per cent, compared with the corresponding week last year; and a decrease of 32,067 cars, or 3.7 per cent, compared with the equivalent 1948 week.

Loadings of revenue freight for the week ended November 4 totaled 862,184 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, November 4

District	1950	1949	1948
Eastern	147,045	107,349	150,858
Allegheny	171,210	87,718	171,804
Pocahontas	64,352	18,682	58,088
Southern	136,049	98,925	130,910
Northwestern	137,564	78,797	126,267
Central Western	138,408	126,798	136,368
Southwestern	67,556	60,712	69,291
Total Western Districts	343,528	266,307	331,926
Total All Roads	862,184	578,981	843,586
Commodities:			
Grain and grain products	58,650	55,862	52,317
Livestock	14,469	16,105	16,390
Coal	153,805	53,411	149,215
Coke	15,866	3,862	14,918
Forest products	46,567	39,992	44,651
Ore	67,983	7,423	61,690
Merchandise l.c.l.	88,196	89,144	107,746
Miscellaneous	416,648	313,182	396,659
November 4	862,184	578,981	843,586
October 28	887,607	591,315	930,973
October 21	890,990	589,088	926,976
October 14	888,559	583,948	912,957
October 7	863,676	574,228	891,651
Cumulative total 44 weeks	32,892,278	30,730,538	36,731,178

In Canada.—Carloadings for the week ended November 4 totaled 88,532 cars, compared with 92,555 cars for the previous week, and 83,638 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
November 4, 1950	88,532	36,753
November 5, 1949	83,638	32,739
Cumulative totals for Canada:		
November 4, 1950	3,281,346	1,380,462
November 5, 1949	3,323,782	1,360,516

Asks I.C.C. for Inquiry Into S.P. Car Service

The West Coast Lumbermen's Association has asked the Interstate Commerce Commission for an investigation of freight car service on the Southern Pacific.

Representing members in northern California and western Oregon, the association filed a petition with the commission charging that in those areas the S.P. has failed to provide an adequate supply of cars for loading lumber and forest products. This condition has been going on in varying

degrees for 45 years, but has been particularly bad for the past three years, the petition charged.

The supply of S.P. freight cars in serviceable condition "has not been kept in reasonably adequate relation to the volume of traffic originated," the association said. It added that the road places "an inordinate reliance on the use of foreign-line-owned cars" for loading the traffic originated on its own lines.

Since 1937, the petition said, carload traffic on the S.P. has increased about 80 per cent, while car ownership has increased only about 9.6 per cent. It placed August, 1950, car ownership at 63,261, including 52,909 box, flat, and gondola cars, and added that anticipated ownership a year hence will be only 68,729 cars. Between May 6 and September 23, the petition said, daily shortages on the S.P.'s Pacific Lines averaged 1,596 cars.

The petition also asked the commission to investigate freight car distribution practices on the S.P. It said the association believes that northern California and western Oregon areas are subjected to inequalities of distribution in the overall S.P. car pool.

Oral Argument in Class Rate Case December 18

The Interstate Commerce Commission has assigned the Class Rate Case (No. 28300) for oral argument before the entire commission at Washington, D.C., on December 18. Secretary W. P. Bartel's notice said the parties will be heard orally and upon written memoranda, in the nature and in lieu of briefs, "which may be served and submitted within five days from the close of oral argument."

New Order on Seating Negroes in Dining Cars

After reconsideration of the Henderson case in the light of the United States Supreme Court's decision of last June, the Interstate Commerce Commission has determined that the assailed Southern dining car rules "in themselves constitute an undue and unreasonable prejudice and disadvantage" to the Negro complainant "and others." Release of the commission's decision on November 10 drew from the Southern's vice-president and general counsel, Sidney S. Alderman, a statement asserting that the road "already had complied with the Supreme Court decision" by establishing new dining car rules effective last July 1.

The complainant in the case was Elmer W. Henderson, and the Supreme Court's decision was embodied in an unanimous opinion announced June 5 (see *Railway Age* of June 10, page 71). The dining-car rules condemned by that decision provided that a special table, seating four persons, be curtained or partitioned off and reserved "exclusively for colored passengers," and that other tables in the diner be reserved "exclusively for white passengers." The I.C.C. had found that these rules were not in violation of the Interstate Commerce Act.

The commission's present finding, "in conformity with the Supreme Court decision," is that the assailed rules were unduly prejudicial "to the extent that dining car service to interstate passengers holding tickets entitling them to use such service, is refused or denied to any person because of race when a dining car with an unoccupied seat, or seats is available." The order accompanying the commission's report requires the Southern to "cease and desist" from applying the condemned rules to its dining-car service.

The curtains or partitions have been removed, and the new regulations which became effective July 1 read as follows:

(1) Passengers seeking dining car service shall be seated at vacant seats in the diner in the order of their entrance into the diner. Waiting passengers must not unduly block the aisles of the dining car.

(2) The steward shall seat diners so as to promote efficient service with comfort and satisfaction to the diners. For example, when practicable parties of two, three or four will be seated together. When entering singly, women will be seated with women, men with men, young people with young persons, elderly persons with elderly persons, white persons with white persons, and Negroes with Negroes. In following the above illustrations, stewards will bear in mind (occupied space permitting), white passengers should be seated from the buffet or kitchen end of the dining car and Negroes from the opposite end. (From the ends toward the middle). No passenger seeking dining car service during the meal hour shall be refused such service when there is a vacant seat in the diner.

(3) It is the immediate duty of the dining car steward to seat passengers in the diner and under the general jurisdiction of the passenger conductor to maintain good order among the passengers and afford prompt service to them.

Mr. Alderman said he felt that these rules are in "full keeping" with the I.C.C. order.

Emken Becomes Director Of I.C.C. Accounts Bureau

Cecil W. Emken has been appointed director of the Bureau of Accounts and Cost Finding of the Interstate Commerce Commission. He had been acting director of the bureau since May 31, when former Director Ford K. Edwards resigned to join the staff of the National Coal Association.

Mr. Emken's appointment was announced by I.C.C. Secretary W. P. Bartel in a November 10 statement which also said that Bert L. Challand had become chief of the bureau's Field Service, a position formerly held by Mr. Emken; and that Bernard V. Moffett had succeeded Mr. Challand as chief of the bureau's Depreciation Section.

Mr. Emken has been with the commission for 23 years, prior to which he served 10 years in the accounting department of the Union Pacific. His service with the commission embraces 9 years as an examiner with the former Bureau of Accounts, and 12 years in the Accounting Section of the Bureau of Motor Carriers, including 6 years as chief of that section. In December, 1949, he was transferred to the Bureau of Accounts and Cost Finding to become chief of that bureau's Field Service.

In that position, Secretary Bartel's notice explained, Mr. Emken "had direction of the field investigation work of all types of carriers and the supervision of the work of the branch offices and the district accountants who work out of the Bureau of Motor Carriers' field offices, and also had direction of the formulation and audit of the annual and quarterly reports required of Class I motor carriers of property and Class I motor carriers of passengers."

Cecil W. Emken

Mr. Challand has been on the commission's staff for the past 25 years. Previously he had been in railroad service for 10 years with the Atchison, Topeka & Santa Fe and the U.P., and with the United States Railroad Administration for 5 years. Mr. Moffett, who has been with the commission 24 years, was previously in railroad service for 10 years with the New York, New Haven & Hartford.

Soo Line Becomes Classroom For Minneapolis Teachers

General offices and shops of the Minneapolis, St. Paul & Sault Ste. Marie became one huge classroom on October 25 as teachers from public schools of the Minneapolis-St. Paul area flocked through the railroad's facilities to learn how a railroad is managed and operated. The teacher-instruction program was part of a "Business-Education Day" observed by business organizations throughout the entire Twin Cities area.

As the teachers assembled in the committee room of the First National-Soo Line building, they were met by Advertising Manager J. W. Lydon, who

acted as host and guide for the trip, and who introduced the group to President G. A. MacNamara and other executive officers of the road. With each introduction, Mr. Lyon outlined the duties and responsibilities of each officer — a pattern which continued as the teachers passed through each of the departmental offices and the mechanical and operating departments' facilities at Shoreham yard in northeast Minneapolis. Mr. Lydon also provided the teachers with historical and statistical material enabling them to grasp more fully the far-flung nature of a railroad and its operation. Prior to their tour of yard and shop facilities at Shoreham, the teachers had luncheon aboard a business car specially spotted for the occasion

"Barriers" Not Curtailing Trucking of Farm Products

Vehicle-weight limitations and taxation are "trade barriers" to truckers handling agricultural commodities, according to the latest issue of "The Marketing and Transportation Situation," published by the Department of Agriculture's Bureau of Agricultural Economics.

In an article discussing the outlook for transportation of farm products, the bureau said new "barriers" may be developing from fees and taxes, as many areas seek "new sources" of revenue for highway construction and other purposes.

These factors are not expected to curtail motor carrier operations, however, as the bureau noted that 1950 ton-miles of for-hire and private trucks combined will probably exceed "substantially" the all-time record set by those carriers in 1949. This 1949 record was 52 per cent above the prewar high set in 1941, and was 7 per cent over 1948, the bureau said.

As to rail transportation of agricultural commodities, the bureau said carloadings for the first eight months of 1950 were about the same as those of last year and were 13 per cent below 1948. It commented that although some rate reductions have been made, the year 1950 has been "something of a postwar record" because it has had no general increase in railroad rates.

Discussing the "widespread" diversion of agricultural products to trucks, the bureau illustrated with three commodities, potatoes, oranges and butter. In the case of potatoes, diversion accounted for more than 10 per cent of the 1949 truck unloads at nine major markets. In the movement of oranges from Florida, trucks gained about 46 per cent in volume between 1948 and 1949 because of diversion. In the case of butter moving to six major markets, trucks gained about 14 per cent because of diversion between the two years, while the railroads lost about 17 per cent.

Gas Turbine Power No Immediate Solution

There is not yet sufficient factual data to establish that the gas turbine is, or will be, more economical or more attractive for general railway use than the diesel locomotive.

This statement was contained in the conclusions of a paper, "Diesel Engines or Gas Turbines for Locomotives?" included for round-table discussion at the Pan American Railway Congress in Mexico City. The paper was prepared by N. C. Dezendorf, director of sales of the Electro-Motive Division of General Motors Corporation, La Grange, Ill., who is a member of the Industrial Advisory Committee of the United States National Commission in the congress. General Motors, with extensive experience in building gas turbines for aviation use is now investigating the possibilities in other applications of the gas turbine at its Allison division, Indianapolis, Ind.

The paper, which reviews the history of gas turbine development and its progress to date, also concludes:

"There seems, furthermore, little immediate prospect that the gas turbine will establish such outstanding economic advantages, compared with the diesel, as to justify the premature claim that the proven economies of the diesel locomotive will be quickly surpassed.

"Operational problems, such as variations in output with variations of temperature and altitude, and sustained high efficiency over a wide range of loads may take some years to solve. A gas turbine locomotive would still retain all the electrical equipment and running gear of the existing diesel locomotive, representing perhaps 80 percent of the whole in terms of initial cost and annual charges such as interest, depreciation and maintenance.

"The main features of the gas turbine, such as lightweight and small sizes, have no particular advantage in locomotive application. Accordingly, the incentive to develop the gas turbine for locomotives is less than in many other applications, particularly aircraft and stationary uses.

"It appears sensible, therefore, to adopt a forward policy as follows: (1) Let the gas turbine develop firstly in the applications such as aircraft, power stations, and other stationary applications where it has a natural advantage and then apply, so far as possible, this development work to the locomotive; (2) Protect the current investment in diesel-electric locomotives by concentrating developments in the field of gas turbine locomotives on a power unit which will exactly replace the existing diesel engine prime mover. If and when the gas turbine can be made to show superior advantages and economy, the power unit alone, representing only say 20 per cent of the cost of the locomotive, can then be substituted for the existing engine."

A parallel between the popular hue and cry for the diesel engine in its earlier development days and some of the current "propaganda" concerning the gas turbine is developed in the paper.

"About the time of World War I there grew a demand for diesel engines of more compact size and lighter weight for such applications as submarine propulsion, and even as aircraft engines. The latter development was stimulated by a desire for minimum weight of fuel and elimination of fire hazard.

"During this period many enthusiasts for the new type of power made claims for the diesel engine which subsequently proved to be exaggerated. They prophesied that the diesel engine would supersede all known forms of power, including the gasoline engine in the motor car and the steam engine, in both its reciprocating and turbine forms."

The paper then brings out the fact that despite the early overall predictions, "there is no natural economic application for the diesel engine in the automobile," and it has found no real

(Continued on page 75)

FOLLOWING THEIR ASSOCIATION'S RECENT CONVENTION in Boston, Mass., a group of railway magazine editors, accompanied by wives and guests, participated in a trip to Bangor, Me., Mt. Desert Island and Belfast, via Bangor & Aroostook bus and Belfast & Moosehead Lake train. The group is shown here at breakfast in a B. & A. diner-lounge car spotted for the occasion at the Bangor station. A.R.M.E.A. President-elect Alfred E. Greco, of the Pullman Company, and Mrs. Greco are at the right of the first row, and at the same table with them are C. A. Paul, president of the B. & M. L., and Mrs. Paul. Clifford G. Massoth, of the Illinois Central, present president of A.R.M.E.A., is on the left in the third row. To his right is W. I. Hall, B. & M. L. auditor

KEEP UP APPEARANCES

Both low costs and good appearances are important aims of railroads, but frequently they don't go together. In the flame-cleaning of locomotive tenders, both aims are accomplished.

Costs are held down because flame-cleaning is a quick economical method for loosening old paint, scale and dirt. The material that is loosened by the flames is easy to brush off to get a down-to-steel finish. A prime coat applied to the warm, bone-dry steel surface flows easily and gets down into the "pores" of the steel.

Flame-cleaning helps appearance because, when paint is applied to the dry, warm surface, it bonds tighter and stays on longer. Flame-cleaned tenders will maintain that new fresh-from-the-shop look longer.

Ask OXWELD how to extend flame-cleaning applications in your shops and on your bridges and structures.

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BUDD DELIVERS FIRST "GALLERY" CARS TO THE BURLINGTON

ALL-STAINLESS STEEL, AIR-CONDITIONED, 148 PASSENGER, TWO-LEVEL CARS FOR BURLINGTON SUBURBANAIRE SERVICE

The order was for 30 cars and we have now delivered 18 of them.

When the first three were placed in service, a group of veteran commuters was invited to try them out. At least two of the passengers had been Burlington commuters for nearly half a century. The Chicago Tribune reported they greeted the new equipment "with spontaneous enthusiasm."

The cars are the standard 85 feet in length and, thanks to imaginative Budd-Burlington space engineering, seat their 148 passengers on two easily-accessible levels, almost doubling the capacity of a conventional car of the same length and weight. The Burlington expects their operating economies and ability to attract traffic to have an immediate and important effect on commuter revenues.

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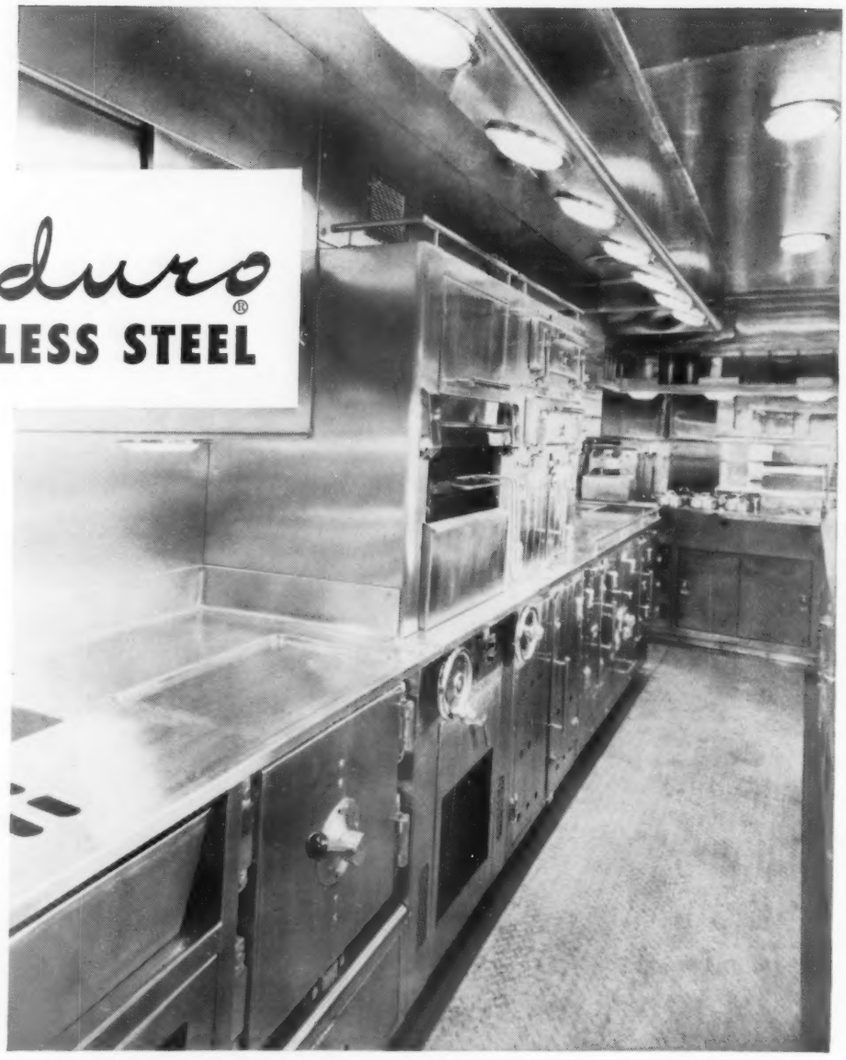

THRIFTY METAL OF 10,000 USES

Immaculate service becomes the rule when the diner kitchen is all-ENDURO . . . and it invariably pays off in patron goodwill! How better can traffic be promoted than by creating an atmosphere of travel luxury . . . the ENDURO way?

MAKES KITCHEN SENSE

An all-ENDURO diner kitchen makes *sense*—with its great ease of cleaning, its resistance to tarnishing, rust and corrosion from food acids and salts, its ruggedness and its long life. In doing so, it produces traffic *dollars.*

LONG LIFE—Installations of over twenty years ago are still in operation and with efficiency unimpaired and undiminished!

LOW-COST MAINTENANCE—Replacement, repair, daily cleaning and upkeep . . . all three are minimum! For ENDURO is a strong, hard alloy steel—stainless through and through—with a smooth pore-free surface as sanitary as glass.

MORE MILEAGE with an all-ENDURO kitchen is a foregone conclusion. The slightly higher initial cost is quickly recovered in operation economies. From there on ENDURO proceeds to turn in handsome dividends.

Why not investigate—today? Call your equipment manufacturer or nearest Republic representative and ask for estimates!

✓ **CHECK ALL 10 ADVANTAGES:** Rust- and Corrosion-Resistance • Heat-Resistance • High Strength • No Metallic Contamination • Sanitary Surfaces • Easy to Clean • Eye Appeal • Easy to Fabricate • Long Life • Low End Cost • *What more can be desired in a material?*

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(*Continued from page 70*)
place in aircraft nor in larger power stations.

The paper reviews the advantages which led the diesel to supersede the steam locomotive and then develops the question of whether the gas turbine gives promise of retaining these advantages, pointing out:

(1) The turbine has lighter weight and more compact size than the diesel, but the weight is needed for tractive effort; there may be some "justification for the claim that eventually the gas turbine should be cheaper to manufacture than the diesel engine, the cost advantage at present is in favor of the diesel." The turbine locomotive can be built in standard sizes just as the diesel.

(2) "The reliability of the gas turbine cannot yet be claimed as high as that of the diesel engine." When operated at 1,000 deg. F. the blade life of the gas turbine is as long as that of the steam turbine. But, efficient locomotive operation involves operating temperatures approximating 1,400 deg. F. "Limitations of pressure ratio and temperature presently limit the efficiency of the gas turbine to little more than half that of the diesel engine. Furthermore, while the efficiency of the latter is sustained at a relatively constant value over a wide range of loads, the gas turbine has much less efficiency at partial loads than at full load. Output and efficiency are extremely sensitive to variations in temperature. Output increases as the air temperature to the compressor falls. The power unit, therefore, has serious disadvantages when the type of operation to which it is applied involves wide variations in ambient temperature conditions." To a lesser extent output and efficiency are affected by atmospheric pressure.

(3) "The gas turbine has not yet substantiated claims that it can equal the diesel's economic advantage to the railroads. While the turbine may burn lower cost fuel than the diesel, the lower efficiency of the turbine may be expected to offset this advantage. As yet unproven are claims for lower maintenance cost because of the rotary nature of the equipment, although it does seem probable that the gas turbine will have a lower lubricating oil consumption than the diesel.

(4) "While sharing the cleanliness of the diesel, the gas turbine locomotive will have offsetting disadvantages of a high and objectionable noise level and a hazard associated with exhaust heat discharge."

Summarizing a study of operating costs of the two types, the paper develops that increased fuel cost of the gas turbine can hardly be recovered by reduced lubricant or repair costs despite the use of cheaper fuel. It points out that operating costs for diesels are factual, but in relation to the gas turbine they are optimistic figures which still remain to be proved.

September Truck Traffic

Motor carriers reporting to the American Trucking Associations transported in September 4,039,690 tons of freight, a decrease of 9.3 per cent below the previous month's total of 4,455,215 tons, but an increase of 20.5 per cent above the 3,353,383 tons transported in September, 1949. The figures, according to the A.T.A., are based on comparable reports from 262 truckers in 41 states.

CAR SERVICE

I.C.C. Service Order No. 865, which imposes increased demurrage charges running up to $20 per day, has been modified by Amendment No. 3. The amendment, effective November 16, suspended until January 16, 1951, the application of the order to refrigerator cars.

OVERSEAS

Pakistan.—This country's government, according to Foreign Commerce Weekly, has requested bids covering supply and delivery, for the Eastern Bengal Railway, of 14 meter-gage locomotive boilers and 32 diesel-electric freight and passenger locomotives. Bidding instructions and other pertinent data on the locomotives are available on a non-refundable fee basis from the Office of the Commercial Counsellor, Embassy of Pakistan, 1744 R street, N.W., Washington, D. C. Similar data on the boilers is available on the same basis from the Office of the Director General of Railways, Railway Division, Ministry of Communications, Karachi, Pakistan. Bids on both lots of equipment should be sent direct to the latter of the two agencies listed.

ORGANIZATIONS

The **Central Western Shippers Advisory Board** will hold its 62nd regular meeting at the Cornhusker Hotel, Lincoln, Neb., on December 11 and 12. Highlights of the meeting will include a joint dinner with the Lincoln Traffic Club on December 11 and a tour through the Havelock shops of the Chicago, Burlington & Quincy the following afternoon. V. S. Peterson, of E. I. Du Pont de Nemours & Co., will be the principal speaker at the main luncheon session on December 12.

The annual meeting of the **Freight Claim Division** of the **Association of American Railroads** has been called for May 22-24, 1951. The sessions will be held at the St. Francis Hotel, San Francisco, Cal.

Railroad Enthusiasts, Inc., New York division, will hold its next meeting on November 22, in room 5928, Grand Central Terminal, New York, at 7:45 p.m. "What a Passenger Representative Does" will be the subject of an address by Christopher F. McLaughlin, passenger representative, New York Central. The Chicago, Indianapolis & Louisville's new movie, "The Hoosier Line," will be shown.

E. H. Williams, regional sales manager of the Railway Express Agency at Chicago, will address the **Minnesota Hotel Association's** 32nd annual meeting and convention to be held in Minneapolis, Minn., on November 25. Mr. Williams will discuss the relationship of Railway Express to hotels and the benefits derived by hotels from using that service.

The **Toronto Railway Club** will hold its 16th annual dinner on December 2, at 7 p.m., in the Royal York Hotel.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

The **Bessemer & Lake Erie** has ordered 500 90-ton hopper cars from the Pullman-Standard Car Manufacturing Company at an estimated cost of $4,250,000. Delivery is scheduled for the fourth quarter of 1951.

The **Burlington Refrigerator Express** was reported in this column on November 11 as having ordered 350 refrigerator cars from the Havelock (Neb.) shops of the Chicago, Burlington & Quincy. *Railway Age* has since been advised that a final decision as to where the cars will be built has not been made.

The **Chicago & North Western** has ordered seven 70-ton covered hopper cars from the Pullman-Standard Car Manufacturing Company. Delivery is scheduled for the second quarter of 1951.

The **Chicago, Milwaukee, St. Paul & Pacific** has ordered 250 covered hopper cars, 50 caboose cars and 30 gondola cars from its own shops. It is estimated by the road that the caboose cars will be delivered in June, 1951, the covered hoppers in October and the gondolas in November.

The **Chicago, Rock Island & Pacific** has ordered 500 70-ton gondola cars from the American Car & Foundry Co. for delivery in the fourth quarter of 1951. These cars, plus the 500 flat and 350 box cars reported ordered in *Railway Age* of September 2, page 95, complete purchases authorized by the road's board of directors as reported in the issue of August 19, page 54. The directors have just authorized the purchase of 3,000 box cars.

The **Denver & Rio Grande Western** has ordered 10 steel caboose cars

from its own shops for delivery in the first quarter of 1951.

The **Detroit, Toledo & Ironton** has ordered 300 50-ton 50½-ft. automobile box cars from the General American Transportation Corporation and 200 70-ton 52½-ft. gondola cars from the American Car & Foundry Co. The box cars, to cost approximately $2,185,000, are scheduled for delivery in the third quarter of 1951, and the gondola cars, to cost about $1,146,000, are scheduled for delivery in the fourth quarter of 1951.

The **Great Northern** has ordered 100 70-ton covered hopper cars from the American Car & Foundry Co. at an estimated cost of $660,000. Delivery is scheduled for the third quarter of 1951.

The **Kansas City Southern** has ordered 100 50-ton automobile box cars from the General American Transportation Corporation at an approximate cost of $900,000. Deliveries are scheduled for June and July next year. The inquiry for these cars, plus 300 additional box cars, was reported in *Railway Age* of May 13, page 68.

The **Lake Terminal** has ordered 150 70-ton gondola cars and 150 70-ton hopper cars from the Magor Car Corporation.

The **Mather Stock Car Company** has ordered 100 40-ton fresh-meat refrigerator cars from its own shops. Construction will begin during the first half of 1951.

The **Newburgh & South Shore** has ordered 100 70-ton gondola cars from the Magor Car Corporation.

The **New York, Chicago & St. Louis** has ordered 50 70-ton covered hopper cars and 150 70-ton flat cars from the Greenville Steel Car Company. Delivery of the cars, which will cost an estimated $1,400,000, is scheduled for July and August, 1951.

The **Union** has ordered 500 70-ton gondola cars from the Greenville Steel Car Company at an estimated cost of $2,840,000. Delivery of the cars is scheduled for August and September, 1951.

The **Wabash** has ordered 50 70-ton gondola cars from the American Car & Foundry Co. for delivery in August, 1951.

The **Youngstown & Northern** has ordered 150 70-ton gondola cars from the Greenville Steel Car Company at a cost of $900,000. Delivery is scheduled for the fourth quarter of 1951.

PASSENGER CARS

The **Pennsylvania** shortly will place orders for 66 new passenger-train cars to re-equip completely its New York-Washington, D. C. "Congressional" and the Washington-Boston, Mass., "Senator." Included in the order will be 32 coaches, 4 coach-lounge cars, 2 conference room cars, 16 parlor cars, 4 parlor-observation-lounge cars and 4 twin-unit dining cars. All cars will be divided equally among the four sections of the two trains, with the exception of the conference room cars, one of which will go into each of the two new sections of the "Congressional." The conference room cars, for daytime occupancy, will have 8 private rooms, each room seating five persons; meals will be served in the rooms.

LOCOMOTIVES

The **Argentine National** has ordered 30 1,400-hp. diesel-electric locomotives from the International General Electric Company. Deliveries of the locomotives, which will cost $7,500,000 and be powered by American Locomotive Company diesel engines, are scheduled to begin early in 1952.

The **Canadian National** has ordered 40 diesel-electric locomotive road freight units for delivery early next year. General Motors Diesel, Ltd., will build 14 "A" and 14 "B" units, all of 1,500 hp., and the Montreal Locomotive Works will construct 6 "A" and 6 "B" units, all of 1,600 hp. They will be operated in long and short haul service between Halifax, N. S., and Winnipeg, Man.

The **Missouri Pacific Lines** have ordered 124 diesel-electric locomotive units, authorization to purchase which was reported in *Railway Age* of October 28, page 181. The M.P. itself will receive five 3-unit 4,500-hp. and two 2-unit 3,000-hp. freight locomotives and three 2-unit 4,000-hp. passenger locomotives from the American Locomotive-General Electric Companies; two 3-unit 4,500-hp. and two 2-unit 3,000-hp. freight locomotives, five 2-unit 3,000-hp. and 22 1-unit 1,500-hp. road-switching locomotives and 17 1-unit 1,200-hp. switching locomotives from the Electro-Motive Division of General Motors Corporation; and 20 1-unit 1,200-hp. switching locomotives from the Baldwin Locomotive Works. For the Gulf Coast Lines the purchase includes seven 1-unit 1,500-hp. road-switching and five 1-unit 1,200-hp. switching locomotives, all to be built by the Electro-Motive Division. The International-Great Northern will get eight 1-unit 1,500-hp. road-switching locomotives, six of which will be built by Electro-Motive and two by Baldwin.

Quebec, North Shore & Labrador.—See Construction column.

IRON & STEEL

The **New York Central System** has ordered 101,300 net tons of steel rail, and rail joint bars, costing about $7,700,000. The rail, to be installed next year by the Central and affiliated railroads, will be of 105-lb., 127-lb. and 132-lb. weights. Orders were placed with the Carnegie-Illinois Steel Corporation, the Bethlehem Steel Company and the Inland Steel Company.

SUPPLY TRADE

Baldwin, Lima-Hamilton Consolidation Effected

Marvin W. Smith, president of the Baldwin Locomotive Works, and G. A. Rentschler, chairman of the executive committee of the Lima-Hamilton Corporation, have announced that directors of their respective companies have declared effective the previously announced agreement and plan of reorganization whereby Baldwin will change its name to the Baldwin-Lima-Hamilton Corporation and acquire all assets of Lima-Hamilton in exchange for Baldwin-Lima-Hamilton stock. (See *Railway Age* of August 12, page 75.)

Pursuant to this reorganization plan, Baldwin expects to transfer, before November 29, to the newly organized Baldwin Securities Corporation, its stock in the Midvale Company and in General Steel Castings Corporation and the cash derived by Baldwin from the sale earlier this year of its stock in Flannery Bolt Company, in exchange for which Baldwin is to receive all Baldwin Securities stock. The Baldwin directors have declared a dividend payable December 20, to stockholders of record November 29, in shares of Baldwin Securities on the basis of one securities corporation share for each Baldwin share.

While the plan has been made effective, actual transfer of Lima-Hamilton assets to Baldwin, and issue of new Baldwin-Lima-Hamilton stock to present Lima-Hamilton stockholders, will not occur until after November 29.

Small Road-Rail Switcher Shown by Whiting

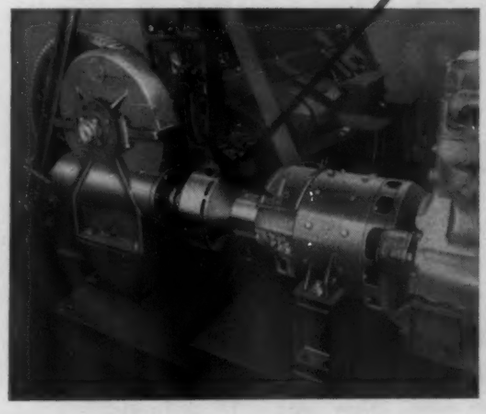
An unusual self-powered automotive type vehicle which can be used for switching was unveiled by the Whiting Corporation at Grand Central Station, Chicago, on November 15, in a special preview attended by railroad and industrial executives and press representatives.

The vehicle, called the "Trackmobile," is small, and light in weight (6,000 lb.) and operates on rails when switching, but can travel about as easily on road or ground as on rails. In spite of its light weight, the unit is capable of moving loaded freight cars. A detailed account of the vehicle will appear in a forthcoming issue of *Railway Age*.

Herbert L. Baldwin, who was removed last August as assistant vice-

NOW AVAILABLE ON BROWNHOIST LOCOMOTIVE CRANES . . .

new dyna-matic clutch



For Smooth, Acceleration, and Control of Hoist, Rotating and Travel

The new, electrically operated DYNAMATIC CLUTCH, available only on Brownhoist locomotive cranes, provides a smooth, responsive flow of power never before possible with the usual disc or mechanical clutch for transmitting power to the machinery of a crane. The DYNAMATIC CLUTCH is essentially a driven rotor revolving on anti-friction bearings within a rotating coil energized by a small flow of current from the starting battery. The new DYNAMATIC CLUTCH has a 32-step control. Power response is steady and sensitive. Loads may be raised, lowered, or rotated smoothly and accurately without the use of mechanical brakes. Torsional impulse and vibration from the power source is completely eliminated. The DYNAMATIC CLUTCH provides a cushion between the engine and crane machinery. When clutch is fully engaged there is no appreciable slippage. Since there is no contact between the revolving field and armature, there is no friction between moving parts nor drag between the parts when the controller is in the off position — no parts need replacement other than inexpensive brushes. The new DYNAMATIC CLUTCH is one more good reason it pays to buy a BROWNHOIST.

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BROWNHOIST

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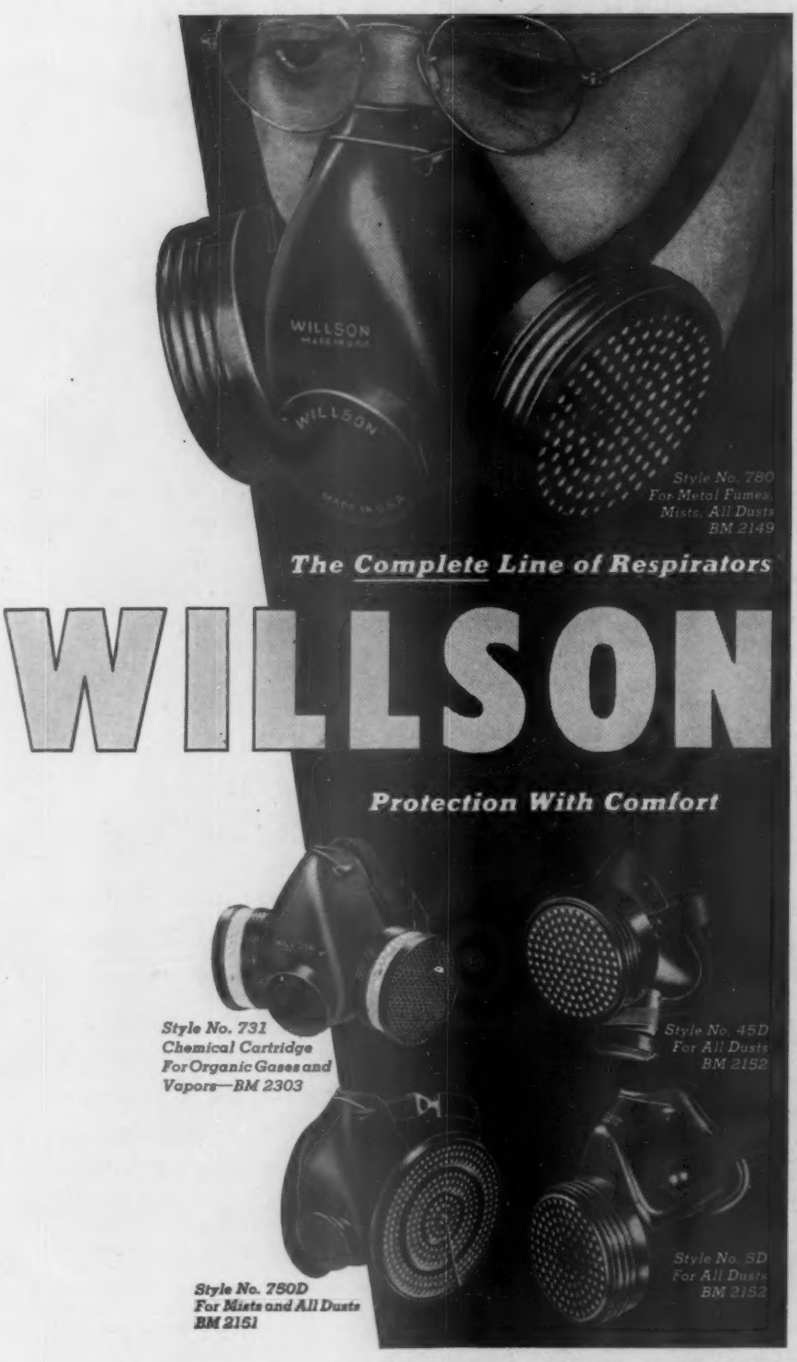

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president of the New York, New Haven & Hartford in charge of public relations and advertising, is now heading his own public relations firm in Boston, Mass. Mr. Baldwin is president of a staff of public relations and publicity men, including photographers, now handling public relations for several New England organizations. Headquarters of the firm — **Herbert L. Baldwin & Associates** — are located in Winchester, Mass., a suburb of Boston. "We are specializing in handling, or directing, public relations and publicity of firms or organizations which may have such problems in New England." Mr. Baldwin told *Railway Age*. "While we are, in no sense, an advertising agency and will not function as such, our permanent staff, and its available auxiliary members, are competent to prepare advertising copy." An outline of Mr. Baldwin's railway career was published on page 58 of the *Railway Age* of August 19.

Charles H. Eisenhardt, formerly assistant manager of the electrical products sales division of **American Steel & Wire Co.,** a subsidiary of the **U. S. Steel Corporation,** has been appointed manager of the division, to succeed **T. F. Peterson,** who has resigned.

Harry G. Morrow, formerly sales manager for welded products for the Spang-Chalfant division of National Supply Company, has been appointed vice-president of **L. B. Foster Company,** with headquarters at Pittsburgh, Pa.

John J. Kenney, director of sales promotion of the **International Business Machines Corporation,** has been promoted to general service manager, in charge of all customer service functions of the company. Appointments of **Ivor C. Armistead, Jr.,** formerly customer engineering manager at Philadelphia, Pa., as manager of customer engineering in New York, and **William E. Gallagher,** assistant customer engineering manager at Los Angeles, Cal., as administrative assistant in the customer engineering department at IBM world headquarters in New York, also have been announced.

The **United States Steel Corporation of Delaware,** the **Carnegie-Illinois Steel Corporation,** the **H. C. Frick Coke Company,** and the **United States Coal & Coke Co.,** four wholly owned subsidiaries of the **United States Steel Corporation,** will be brought together into a single operating company on January 1, 1951, Irving S. Olds, chairman of the board, has announced. This single company, Mr. Olds said, will also be a wholly owned subsidiary of the corporation, known as the United States Steel Company, and will have head-

quarters in a new office building in Pittsburgh, Pa.

"**Benjamin F. Fairless,** who is now president of United States Steel Corporation of Delaware, will become president of this single company," Mr. Olds added. "He will continue as president of the parent company, United States Steel Corporation. The other principal executives of this single operating company will consist of five executive vice-presidents: **Clifford F. Hood** — operations; **David F. Austin**—commercial; **Roger M. Blough**—law and secretarial; **Malcolm W. Reed**—engineering, and **George W. Rooney**—accounting.

"Mr. Hood is now president of Carnegie-Illinois Steel Corporation," Mr. Olds continued. "Messrs. Austin, Reed and Rooney are now vice-presidents of United States Steel Corporation of Delaware, and Mr. Blough is secretary and general solicitor of that subsidiary. The president and these five executive vice-presidents will constitute an executive committee of this single company, of which committee Mr. Fairless will be chairman and Mr. Hood, vice-chairman. After January 1, 1951, the present sales offices of Carnegie-Illinois will be conducted in the name of United States Steel Company. There will be no change in the present customer relationships of Carnegie-Illinois. The new program does not affect the other subsidiaries of the corporation, which will continue in business as in the past."

Howard M. Palmer has been appointed general sales manager of **Lewis-Shepard Products, Inc.,** Watertown, Mass., and Crawfordsville, Ind. He formerly was New England district sales manager for the General Fireproofing Company and during

Howard M. Palmer

World War II was assistant materials superintendent in charge of materials handling at Bethlehem Hingham Shipyard. He has since directed sales for the Lewis-Shepard power division, the position he held at the time of his recent appointment.

Lawrence L. Garber, who has been appointed general manager of the American-Fort Pitt Spring division of H. K. Porter Company, McKees Rocks, Pa.

OBITUARY

Burt T. Anderson, transportation research director of the Union Switch & Signal Co., with headquarters at Swissvale, Pa., died on November 8, in Pittsburgh, Pa. Mr. Anderson was born on October 31, 1884, at Alexis, Ill., and graduated from the University of Illinois in 1907 with a B. S. degree in electrical engineering. He entered the signal apprenticeship course of Union Switch in July, 1907. On

Burt T. Anderson

June 1, 1910, Mr. Anderson entered the service of the Atchison, Topeka & Santa Fe as a draftsman, being promoted on October 1 of that year to construction foreman. In March, 1913, he was appointed assistant signal engineer of the Santa Fe system, serving in that capacity until June, 1914, when he was appointed assistant signal engineer on the Delaware, Lackawanna & Western. On June 1, 1923, Mr. Anderson left the Lackawanna to become superintendent of signals of the Chesapeake & Ohio, at Richmond, Va., which position he held until September 1, 1927, when he resigned to accept a position as assistant to the vice-president of the Union Switch & Signal Co. In 1929 he was appointed assistant to the president. In January, 1937, Mr. Anderson was appointed general sales manager, and in July, 1940, was promoted to transportation research director.

ABANDONMENTS

Division 4 of the I.C.C. has **authorized:**

CHICAGO & NORTH WESTERN.—To abandon 5.4 mi. of the Big Falls branch, between Hunting, Wis., and Big Falls.

DENVER & RIO GRANDE WESTERN.—To abandon 53.21 mi. of its narrow-gage main line between Mears Junction, Colo., and Hooper. Division 4's report noted that federal and state highways closely parallel the line with "numerous" motor carriers authorized to operate throughout the area. Operation of the line has been conducted at increasing deficits during the past several years, the division said, adding that substantial expenditures for rehabilitation would have to be made if operations were continued.

LEHIGH VALLEY.—To abandon 16.7 mi. of branch line from a point west of Ludlowville, N. Y., to a point east of Aurora.

PENNSYLVANIA.—To abandon 3.8 mi. of branch line between Irvona, Pa., and Berwindale, retaining for use as a tail track about 1.3 mi. of line on which strip coal loading facilities are located, at the Irvona end of the segment.

PENNSYLVANIA.—To abandon its so-called Keister branch, 1.4 mi., from Waltersburg, Pa., to the end of the line.

PENNSYLVANIA - READING SEASHORE.—To abandon two branch line segments in New Jersey, and to abandon operation over a third segment owned by the West Jersey & Seashore. The latter road will abandon the line over which the P.-R. S. operates. The branch lines involved are: P.-R. S.—6.3 mi. of Mullica Hill branch between Glassboro and Mullica Hill, and 1.06 mi. of Cape May Real Estate branch from junction with Cape May branch to end of line; and W. J. & S.—4.5 mi. of Riddleton branch between Elmer and Daretown.

In authorizing these abandonments, the commission also dismissed, at the roads' request, the application for authority to abandon 6.2 mi. of branch line between Pleasantville and Somers Point.

SOUTHERN PACIFIC.—To abandon approximately 11 mi. of branch line between Kurand, Cal., and Fruto. This abandonment was incorrectly reported as having been authorized in Railway Age of August 12, page 80. It should have been reported as an abandonment application at that time.

TREMONT & GULF.—To abandon its line between Eros, La., and Tremont, approximately

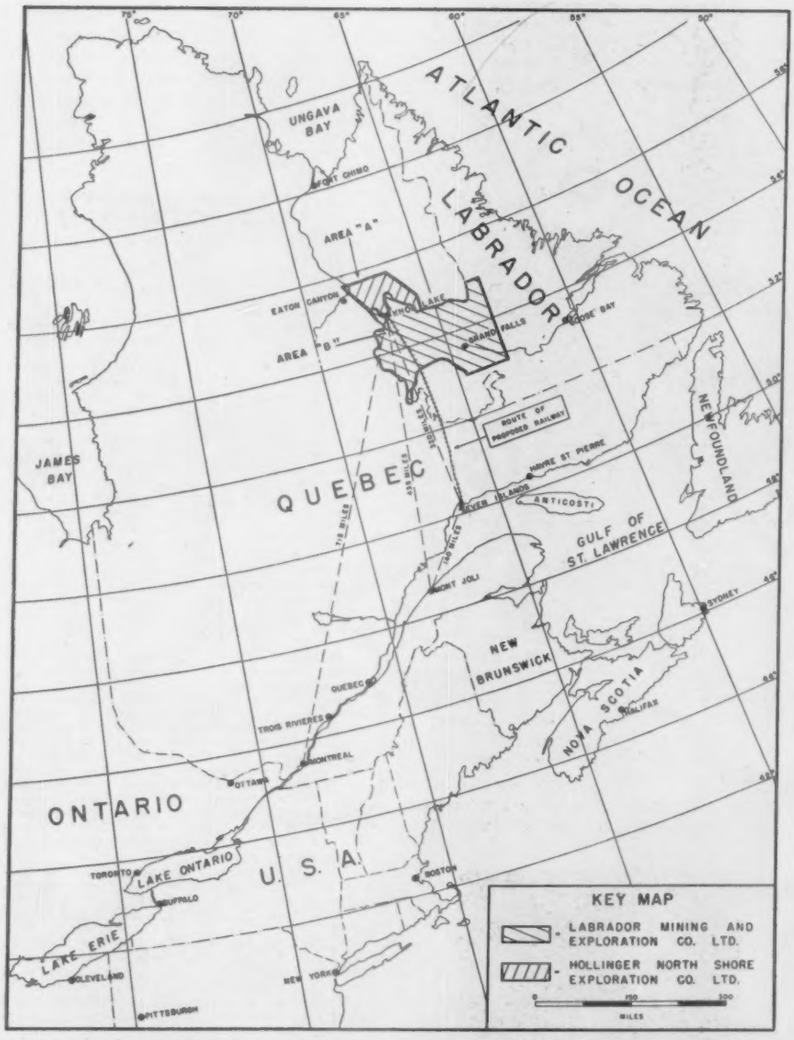
Application has been filed with the I.C.C. by:

PENNSYLVANIA.—To abandon operation of its ferry across the Hudson river between Jersey City, N. J., and Cortlandt street, New York. The road's application said the ferry has operated at a loss since the opening of the Holland Tunnel.

CONSTRUCTION

Southern.—A contract for grading and drainage at this company's new Ernest Norris yard at Birmingham, Ala., has been awarded to the MacDougald Construction Company of Atlanta, Ga. Work will start immediately and it is estimated that approximately 1,800,000 cu. yd. of earth will be moved in the grading process.

Quebec, North Shore & Labrador.—As reported in the *Railway Age* of November 11, page 98, contracts have recently been awarded to a group of Canadian companies for construc-



LOCATION and approximate route of the Quebec, North Shore & Labrador, and of the new iron ore deposits which it will serve

tion of this new line, approximately 360 mi. in length, from Seven Islands, Que., to the newly explored Quebec-Labrador iron ore deposits. The location of these ore fields and of the Q. N. S. & L. line, with relation to major cities in eastern Canada and northeastern United States, are shown on the accompanying map.

Although Mont Joli, Que., (on the Halifax, N. S.-Levis, Que., line of the Canadian National and the Canada & Gulf Terminal) is the nearest existing railhead to Seven Islands, most of the materials and supplies for the new line will be shipped by water from Montreal, Que., to Seven Islands, where waterside facilities are now under construction. Rail line construction will necessarily begin at that point and proceed northward, since the area to be traversed north of Seven Islands is presently accessible only by air.

The single-track line will be laid with 132-lb. rail, with local gravel ballast and treated ties to the extent that they can be obtained. Some native timber will be used on the north end of the road. The ruling grade will be 0.4 per cent southbound — the direction of the loaded movement — and 2 per cent northbound. The principal river crossing will be on a bridge 230 ft. long and 130 ft. high, about 14 mi. north of Seven Islands. The line's only tunnel, about 600 ft. long, will be close to the same river crossing.

When the line is in full operation, about 1955, it is planned to move about 10 million tons of ore during each six-month shipping season. Motive power for this movement will consist of about 55 1,500-hp. diesel-electric locomotive units. These, it is anticipated, will normally be operated in multiples of four, hauling 100-car trains of 100-ton hopper cars.

St. Louis-San Francisco.—Plans for a $300,000 addition to this road's recently completed Springfield, (Mo.) diesel shops have just been announced. The new project will add four more tracks, two of them with servicing pits, in a 95-ft. by 249-ft. addition to be constructed along the north side of the present building, the north wall of which was built to be readily removable if further expansion of the shop was indicated. Work on the project will begin as soon as materials, now on order, are delivered.

FINANCIAL

Baltimore & Ohio.—*Annual Meeting.*—This road's stockholders, at the annual meeting in Baltimore, Md., on November 20, will be asked to approve the road's guarantee of payment by the Buffalo, Rochester & Pittsburgh of all sums payable by the latter under a conditional sales agreement involving purchase of 34 diesel-electric locomotives costing approximately $5,336,218. The B. R. & P., almost wholly owned by the B. & O., is operated as part of the latter's system.

Cleveland Union Terminals.—*To Call First Mortgage Bonds.*—This company plans to call its $41,614,400 of outstanding first mortgage bonds for redemption on April 1, 1951, and expects to issue new bonds to provide a major portion of the necessary funds, Gustav Metzmann, president, has announced. The bonds are guaranteed jointly and severally by the New York Central, the Cleveland, Cincinnati, Chicago & St. Louis and the New York, Chicago & St. Louis.

Great Northern.—*Acquisition.*—This road has applied to the I.C.C. for authority to acquire control of the Pacific Coast Railroad by purchasing its capital stock for $1,700,000. The latter is a 22.4-mi. line between Seattle, Wash., and Maple Valley, with an additional 7.4-mi. branch between Maple Valley and Black Diamond. Present owner of the short line's stock is the Pacific Coast Company which, according to the G.N., has been actively trying to sell the line for 10 years. The G.N.'s application said it would pay for the line in 10 annual payments of $170,000 each, and that the unpaid balance from year to year will bear interest at 3 per cent. It also said that acquisition of this line would enable the G.N. to aid in the industrial development of the greater Seattle area.

New Securities

Application has been filed with the I.C.C. by:

DENVER & RIO GRANDE WESTERN.—To issue $1,000,000 of first mortgage series A bonds, due January 1, 1993, now in the company treasury. The bonds would be offered for sale on the New York Stock Exchange. Proceeds from their sale would reimburse the road in part for cash used in prepaying a note to the Chase National Bank of New York, and in redeeming first mortgage bonds of the Denver & Salt Lake. The D. & R. G. W. bonds are a part of that road's authorized principal amount of first mortgage bonds, totaling $40,097,700; they bear fixed in-

terest at 3 per cent and contingent interest at 1 per cent.

Division 4 of the I.C.C. has **authorized:**

WABASH.—To assume liability for $3,315,000 of series C equipment trust certificates, the second and final installment of an $8,535,000 issue. The I.C.C. authorized the first installment of $5,220,000 in June, and the new equipment to be purchased by the entire issue was listed in Railway Age of June 3, page 58. The present certificates will be dated as of June 1, and will mature in 15 annual installments of $221,000 each, beginning June 1, 1951. Winning bid for the issue was that of Salomon Bros. & Hutzler and three associates, who bid 98.837 with interest at 2⅜ per cent. The average annual cost of the proceeds will be approximately 2.56 per cent. The certificates were reoffered to the public at prices yielding from 1.65 to 2.65 per cent, according to maturity.

Security Price Averages

	Nov. 14	Last week	Last year
Average price of 20 representative railway stocks	48.30	46.86	38.12
Average price of 20 representative railway bonds	95.86	92.93	86.72

Dividends Declared

Camden & Burlington County.—75¢, semiannual, payable January 2, 1951, to holders of record December 15.

Chicago & Eastern Illinois.—Class A, $1, payable December 20 to holders of record December 5.

Chicago & North Western.—preferred, $2.50, payable December 1 to holders of record November 20.

Chicago, Burlington & Quincy.—$4, semiannual, payable December 28 to holders of record December 18.

Chicago, Rock Island & Pacific.—preferred, $1.25, quarterly; common, 75¢, quarterly, both payable December 22 to holders of record December 11.

Delaware.—$1, semiannual, payable January 2, 1951, to holders of record December 15.

Pittsburgh & Lake Erie.—$3, payable December 15 to holders of record November 22.

Pittsburgh & West Virginia.—(year end) $1, payable December 13 to holders of record November 20.

Pittsburgh, Youngstown & Ashtabula.—7% preferred, $1.75, quarterly, payable December 1 to holders of record November 20.

Rutland & Whitehall.—$1, quarterly, payable November 15 to holders of record November 1.

West Jersey & Seashore.—$1.50, semiannual, payable January 2, 1951, to holders of record December 15.

RAILWAY OFFICERS

EXECUTIVE

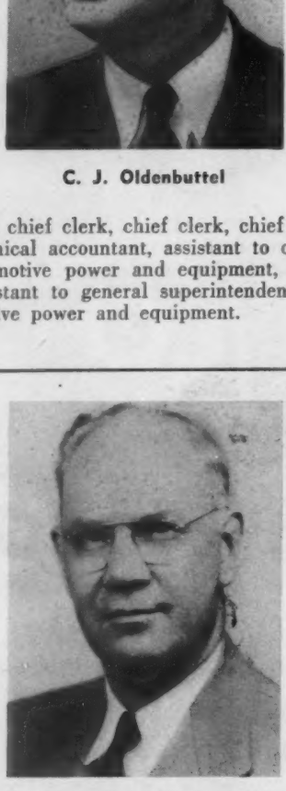
T. C. Smith, general manager, Western region, of the BALTIMORE & OHIO, with headquarters at Cincinnati, Ohio, has been appointed also president of the TOLEDO TERMINAL.

The November 4 *Railway Age* reported, incorrectly, the appointment of **Holly Stover** as assistant to the president, CHICAGO, BURLINGTON & QUINCY. Mr. Stover's correct title is executive assistant.

C. J. Oldenbuttel has been appointed assistant to president of the ATLANTIC COAST LINE at Wilmington, N. C., as was reported in the *Railway Age* of October 7. Mr. Oldenbuttel was born at Wilmington and received his education in the public schools of New Hanover county. He began his railroad his railroad career with the A.C.L. on April 12, 1912, as messenger at Wilmington and later served as clerk in the office of the auditor of disbursements, subsequently holding the following positions in the office of general superintendent motive power and equipment at Wilmington: Clerk, assis-

C. J. Oldenbuttel

tant chief clerk, chief clerk, chief mechanical accountant, assistant to chief of motive power and equipment, and assistant to general superintendent of motive power and equipment.



David O. Mathews, general counsel of the Chicago & Eastern Illinois at Chicago, has been elected a vice-president of that road, remaining in charge of all legal affairs

FINANCIAL, LEGAL & ACCOUNTING

H. B. Harding, tax commissioner of the SOUTHERN PACIFIC, with headquarters at San Francisco, Cal., will retire from active service on December 31, because of ill health. Mr. Harding began his railroad career in 1902 with the Chicago, Rock Island & Pacific at Denver, Colo., and in 1904 became employed by the combined Rock Island and St. Louis-San Francisco Lines at New York. From 1905 to 1909 he served as secretary to the chairman of the executive committee of the Rock Island-Frisco Lines and secretary to the president of the Frisco. He joined the El Paso & Southwestern in 1910 as assistant right of way agent, at El Paso, Tex., and two years later became assistant real estate and tax commissioner. In 1915 he was advanced to real estate and tax commissioner, which position he held with the E. P. & S. W. until that road was merged with the S. P. in November, 1924. At that time he was appointed land and tax agent for the S. P. at El Paso, being transferred to San Francisco in 1935 to assume charge of all tax matters. Mr. Harding was made tax commissioner in August, 1942.

Stanley H. May, general auditor of the CANADIAN NATIONAL, has been named assistant comptroller, with headquarters as before at Montreal, Que., and **Martin D. Whitaker** has been appointed auditor of general accounts at Montreal. Mr. May was born at Croydon, England, and began his railway career in 1917 at Montreal as a clerk in the accounting department of the Grand Trunk (now C.N.). He became a bookkeeper in 1918 and chief clerk in 1922. In 1923 he was promoted to chief bookkeeper of the C.N., becoming assistant general accountant in 1924, general accountant in 1930, chief accountant in 1932, assistant general auditor in 1943 and general auditor in 1945.

OPERATING

As reported in the *Railway Age* of October 21, **J. D. King** has been appointed superintendent of the Illinois division of the NEW YORK CENTRAL at Mattoon, Ill. Mr. King was born at Bellefontaine, Ohio, in 1899. He began his career with the Central at that point in 1916 as a messenger, and in 1920 became secretary to the assistant general superintendent at Indianapolis,

J. D. King

Ind. In 1936 he returned to Bellefontaine as extra yardmaster, becoming night general yardmaster at Galion, Ohio, in 1942. From 1943 to 1944 he served as assistant trainmaster, and subsequently was advanced to trainmaster at Columbus, Ohio. Mr. King

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was appointed assistant to assistant general manager at Indianapolis in 1946, and later that year was transferred to Springfield as assistant superintendent.

As reported in the *Railway Age* of October 21, **E. J. Gibbons** has been appointed general manager of the NEW YORK CENTRAL at Cincinnati, Ohio, with jurisdiction over the Big Four district, the Peoria & Eastern and the Louisville & Jeffersonville Bridge & Railroad. Mr. Gibbons was born at Greenville, Pa., on November 8, 1896, and entered railroad service in September, 1913, as a stenographer on the Lake Shore & Michigan Southern (now N. Y. C.) at Youngstown, Ohio. He served successively at that point as accountant, timekeeper, chief time-

E. J. Gibbons

keeper, car distributor, yard clerk and yardmaster. He was transferred to Cleveland in 1927 as chief supervisor of car service, and was appointed general yardmaster in 1928 and trainmaster in 1938. In 1940 he was made assistant superintendent at Cleveland, and in 1943 was promoted to superintendent, being transferred in that capacity to Toledo, Ohio, in 1946. Later the same year Mr. Gibbons became assistant general manager at Indianapolis, Ind., and in 1947 was transferred in that position to Cleveland.

O. R. Crooks, assistant general manager of the TOLEDO TERMINAL, has been promoted to general manager, with headquarters as before at Toledo, Ohio.

H. H. Vaughn, trainmaster on the Toledo division of the PENNSYLVANIA, has been transferred in the same capacity to the Columbus division, with headquarters at Sandusky, Ohio.

Frank McElroy, who has retired as general manager, Michigan Central district, of the NEW YORK CENTRAL SYSTEM, at Detroit, Mich., as reported in the October 21 *Railway Age*, was born on October 29, 1882, at Lapeer, Mich. Mr. McElroy received his early education in the public schools of Detroit

and Windsor, Ont., and subsequently attended Windsor Collegiate Institute. He entered railroad service in November, 1899, as a car checker on the Michigan Central (now M. C. district, N. Y. C.) at Windsor. From 1901 to 1916, he served successively as yard brakeman, yardmaster and general yardmaster at that point, later being

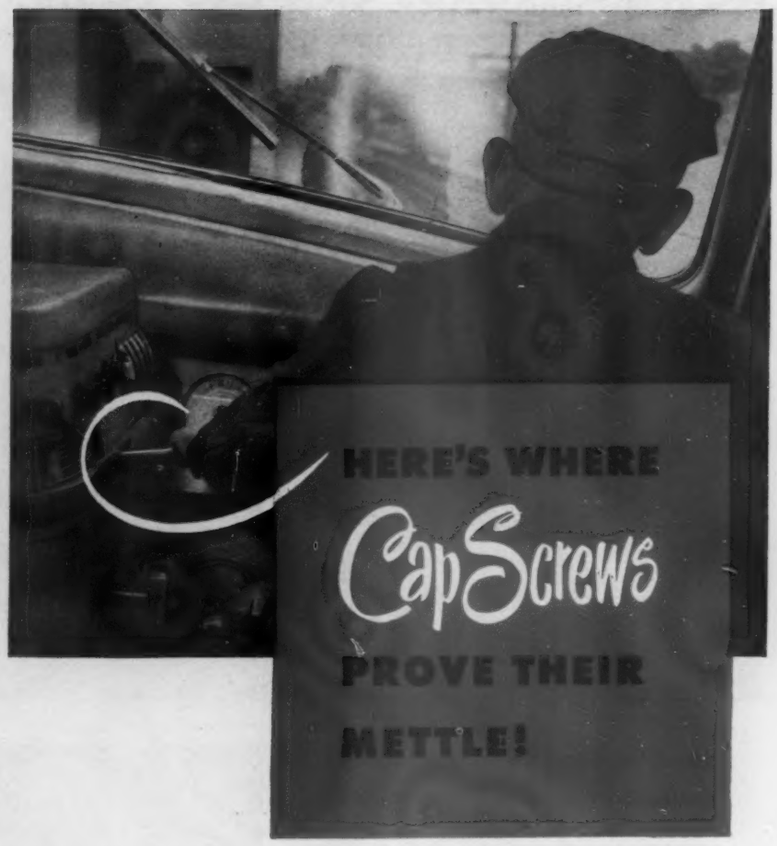
Frank McElroy

transferred to St. Thomas, Ont., as trainmaster. He became assistant superintendent at Niles, Mich., in 1926, and in 1929 was advanced to superintendent, with headquarters at Detroit. After serving as assistant to general superintendent from 1933 to 1942, he was further advanced to assistant general manager, and in August, 1946, became general manager.

As reported in the *Railway Age* of October 28, **R. J. Cannon** has been appointed superintendent of the BALTIMORE & OHIO at St. George, Staten Island, N. Y. Mr. Cannon was born at Painesville, Ohio, on February 10, 1901, and entered railroad service on

R. J. Cannon

May 1, 1919, as yard clerk with the B.&O. at Painesville. He was appointed chief yard clerk on May 21, 1921; yardmaster on April 23, 1923; night general yardmaster on June 1, 1928, and general yardmaster on April 1, 1937, all at Painesville. On June 1,



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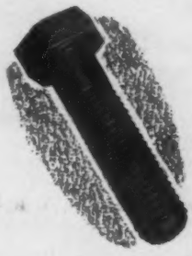

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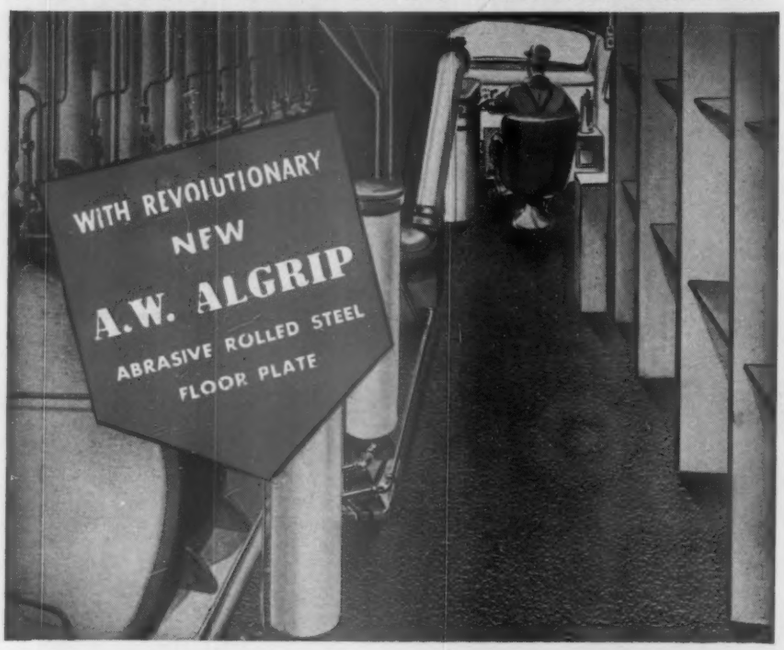

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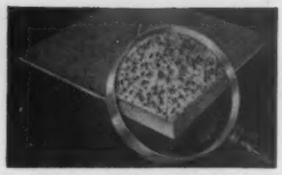

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1938, Mr. Cannon became assistant terminal trainmaster at Willard, Ohio; on January 1, 1941, terminal trainmaster at Youngstown, Ohio, and Willard; on January 15, 1942, trainmaster at Garrett, Ind., and on April 15, 1944, terminal superintendent at Buffalo, N. Y. He held the latter position until his recent appointment.

As reported in the October 28 *Railway Age*, **Bert L. Lindley** has been promoted to superintendent of the ALAMEDA BELT LINE and the OAKLAND TERMINAL at Alameda, Cal. Mr. Lindley was born on March 25, 1894, at Sulphur Springs, Tex., and entered railroad service as a station agent and telegrapher, serving in that capacity from 1912 to 1916 on the Fort Worth & Denver City, the St. Louis & San Francisco (now St. Louis-San Francisco) and the Chicago, Rock Island & Pacific. He subsequently served in a similar capacity on the Kansas City, Mexico & Orient (later purchased by the Atchi-

Bert L. Lindley

son, Topeka & Santa Fe), and also held positions as train dispatcher and chief dispatcher for the same road. In 1929 he became an agent on the Santa Fe's Panhandle division, and in 1937 was appointed transportation inspector on the Plains division, at Amarillo, Tex., being advanced to trainmaster on the Albuquerque division in June, 1942. From September, 1944, to January, 1946, Mr. Lindley served as transportation inspector on the Arizona division, at Bakersfield, Cal., later becoming agent at Richmond, Cal., the post he held before his recent promotion.

R. E. Johnson, former assistant superintendent of the Victoria division of the SOUTHERN PACIFIC LINES in Texas and Louisiana, who had recently been assigned to special work at Houston, Tex., has been appointed general manager of the TEXAS MEXICAN at Laredo, Tex. He succeeds **G. W. Kelly,** newly-appointed superintendent of the Houston terminals for the Texas and Louisiana lines, (see *Railway Age* of November 11). **J. W. Rush,** trainmaster at Del Rio, Tex., has been transferred in the same capacity to San Antonio, Tex. **J. U.**

Tate, transportation inspector, succeeds Mr. Rush.

The SOUTHERN has announced the following changes in its operating department, effective November 16: **William H. Oglesby,** superintendent at Greensboro, N. C., appointed superintendent at Knoxville, Tenn.; **Albert W. St. Clair,** superintendent at Asheville, N. C., appointed superintendent at Greensboro, succeeding Mr. Oglesby; **E. Rogers Oliver, Jr.,** superintendent at Richmond, Va., appointed superintendent at Asheville, succeeding Mr. St. Clair; and **Charles K. Carter, Jr.,** superintendent at Knoxville, appointed superintendent at Richmond, succeeding Mr. Oliver.

TRAFFIC

R. G. Chestnut, industrial engineer in the department of research and development of the CANADIAN NATIONAL at New York, is one of 26 men specially selected from key positions in industry, government and armed services to examine and assist in the development of a comprehensive plan for defense coordination in Canada. The group is receiving special instruction at the National Defense College, Kingston, Ont. Mr. Chestnut has been granted a year's leave of absence from his railway duties to undertake this assignment.

Paul D. Pederson, traveling freight agent of the CANADIAN PACIFIC at New Orleans, La., has been promoted to district freight agent at Minneapolis, Minn. He succeeds **A. Werner Kelly,** who has been transferred to St. Louis, Mo., to replace the late **P. D. Salmon.** Mr. Salmon's death was reported in the September 23 *Railway Age.*

Edward T. Butler, general agent of the ERIE at Cleveland, Ohio, has been appointed industrial agent for the Western district.

Fred McGee, assistant general freight and passenger agent of the MISSOURI-KANSAS-TEXAS at Tulsa, Okla., has been advanced to assistant freight traffic manager at Kansas City, Mo., to succeed the late **F. H. Dowling,** whose death is reported elsewhere in this issue. **D. R. Miller,** general agent at Portland, Ore., replaces Mr. McGee, and is in turn succeeded by **L. R. Hahn,** traveling freight and passenger agent at Seattle, Wash. **W. J. Dooley,** division freight agent at Kansas City, has been appointed to the newly created position of assistant general freight agent, with the same headquarters.

Mr. McGee was born in Wise county, Tex., on August 5, 1900. He entered the service of the Katy in 1921 in the local freight office at Dallas, Tex. After holding various posts in the traffic department at Dallas, Houston, Tex., and Muskogee, Okla., in 1947 he was promoted to division freight

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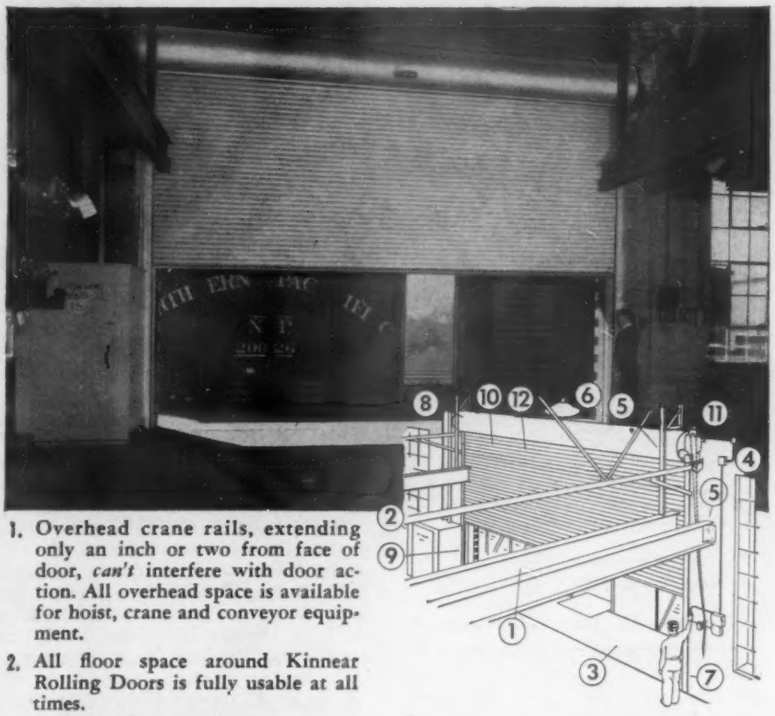

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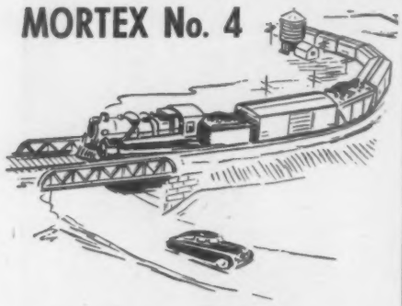

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It's tops for steel bridges, cooling system ducts and sumps, outside storage tanks, tool houses and bins.

Will not run, sag, blister or craze at temperatures up to 250° F.

EASY TO APPLY

Mortex No. 4 can be put on with brush, trowel or spray. It adheres to any clean, dry surface and forms a rich, dull black finish.

TRY IT YOURSELF

Most railroads get Mortex No. 4 in 55 gallon drums, but you can order either a 1-gallon or a 5-gallon can and put it through your own comparative tests.

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and passenger agent at Tulsa, becoming assistant general freight and passenger agent there in 1948.

MECHANICAL

J. W. Tragnitz, master mechanic of the ILLINOIS CENTRAL at Vicksburg, Miss., has been promoted to general master mechanic at Chicago, succeeding **A. G. Gebhard,** who has resigned. **R. J. Chinn,** assistant to the general superintendent of equipment at Chicago, succeeds Mr. Tragnitz.

As a part of a general reorganization of mechanical department supervisory forces on its Pere Marquette district, the CHESAPEAKE & OHIO has announced the following changes: **E. A. Kuhn,** superintendent motive power, promoted to superintendent motive power and equipment, with headquarters remaining at Grand Rapids, Mich.; **H. M. McInnes,** assistant superintendent motive power at that point, advanced to assistant superintendent motive power and equipment there; **W. R. Reid,** master mechanic at Saginaw, Mich., promoted to superintendent locomotive department at Grand Rapids, and **O. T. Butcher,** master mechanic at St. Thomas, Ont., transferred to succeed Mr. Reid.

Mr. Kuhn was born at East Radford, Va., on May 2, 1897, and was graduated from the University of Pittsburgh in 1920. He started railroad service in 1920 with the New York, Chicago & St. Louis as machinist and special engineer at Conneaut, Ohio. From 1929 to 1932, he served as assistant engineer of motive power on the mechanical advisory committee of the C. & O., the Nickel Plate and the Pere Marquette (now P.M. district, C.&O.) at Cleveland, Ohio. He was made master mechanic for the P.M. at St. Thomas in 1932, being transferred to Saginaw in 1937. Mr. Kuhn became superintendent motive power in February, 1947.

Mr. McInnes began his career with the P.M. in 1913, and served as bookkeeper, statistical clerk and chief accountant before transferring to the mechanical department in 1923. He became an accountant in the office of the superintendent motive power in 1923, and from 1937 to 1943 served as chief clerk, subsequently being made assistant to the chief mechanical officer. He had been serving as assistant superintendent motive power since 1949.

PURCHASES & STORES

V. B. King has been appointed purchasing agent of the PIEDMONT & NORTHERN at Charlotte, N. C., succeeding **W. A. Thomason,** retired.

D. M. Craig has been appointed assistant purchasing agent of the Angus shops of the CANADIAN PACIFIC at Montreal, Que., succeeding **P. T. Childs,** deceased.

H. H. Enman, general fuel agent for the CANADIAN PACIFIC's Prairie and Pacific regions, with headquarters at Winnipeg, Man., has retired after 46 years of service with that road. He is succeeded by **H. R. Impey** of the fuel department at Winnipeg.

ENGINEERING & SIGNALING

R. H. Menary, assistant division engineer of the CANADIAN NATIONAL at Belleville, Ont., has been appointed division engineer of the Hornepayne division at Hornepayne, Ont., succeeding **R. A. Shier,** transferred. **D. W. Blair,** division engineer of the Laurentian division at Quebec, Que., has been transferred to the Montreal terminals and St. Jerome divisions at Montreal, Que., succeeding **M. J. A. A. Des Trois Maisons,** resigned.

B. J. Worley, division engineer of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC at Aberdeen, S. D., has been transferred in that capacity to the Chicago terminal division. **B. E. Daniels,** division engineer at Spokane, Wash., succeeds Mr. Worley. **W. C. Witham,** division engineer at Ottumwa, Iowa, moves to Spokane, to succeed Mr. Daniels, and **R. J. Coffee,** assistant division engineer at Terre Haute, Ind., becomes division engineer at that point.

SPECIAL

F. A. Gaffney, transport economist in the research and development department of the CANADIAN NATIONAL at Montreal, Que., has been appointed chief of transport research. **G. R. Johnston,** assistant transport economist at Toronto, Ont., succeeds Mr. Gaffney at Montreal and has been replaced at Toronto by **R. A. Rollo,** assistant transport economist at Montreal. **J. C. Gardiner,** assistant transport economist at Winnipeg, Man., succeeds Mr. Rollo at Montreal and **J. D. Reynett,** research assistant at Montreal, replaces Mr. Gardiner at Winnipeg. **D. F. Mills,** junior assistant economist, has been appointed research assistant, with headquarters as before at Montreal.

OBITUARY

Clarence G. Bowker, who retired in December, 1938, as vice-president and general manager of the GRAND TRUNK WESTERN at Detroit, Mich., died on November 4, at the age of 79.

Carleton A. Searle, 84, former general passenger agent of the CHICAGO, ROCK ISLAND & PACIFIC at Kansas City, Mo., who retired from that position in August, 1936, died on November 6, at Hammond, Ind.

F. H. Dowling, assistant freight traffic manager of the MISSOURI-KANSAS-TEXAS at Kansas City, Mo., who died in that city on September 29 as the result of a heart attack, was born on May 22, 1898, at St. Louis, Mo.,

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where he attended high school and business college. He entered railroad service in December, 1912, as a messenger on the St. Louis Southwestern at St. Louis. Subsequently he held various positions with that road until 1924, except for one year's service on the Wabash in 1920. In April, 1924, Mr. Dowling joined the Katy at St. Louis as soliciting freight agent, and in 1929 moved to Minneapolis, Minn., as general agent. He served as general freight agent at Kansas City from August, 1940, to November, 1948, at which time he was appointed assistant freight traffic manager at that point.

Andrew P. Titus, chairman of the executive committee of the ILLINOIS TERMINAL and former president of that road, died on November 9 after a brief illness. Mr. Titus became chairman of the executive committee in 1948 following his retirement as president. He was born on April 11, 1875, near Princeton, N. J., and was educated at Princeton Preparatory School and Princeton University. In July, 1890, he entered railroad service in the car department of the Lake Shore & Michigan Southern (now part of the New York Central) at Cleveland, Ohio. From 1893 to 1895, Mr. Titus was connected with a mining company in Mexico, after which he returned to the L.S.&M.S. at Cleveland. In 1900 he went with the Wheeling & Lake Erie as car distributor and chief clerk to the

Andrew P. Titus

superintendent of car service at Pittsburgh, Pa. He was appointed assistant superintendent at Canton, Ohio, in 1905, later being advanced to superintendent at that point. He joined the Chicago & Alton (now part of the Gulf, Mobile & Ohio) in 1912 as general superintendent at Chicago, being promoted to general manager in 1915. In 1922 Mr. Titus was elected vice-president in charge of operation of the Alton, and in August of the same year, when the company went into receivership, was appointed chief operating officer. In January, 1929, he went with the I. T. as vice-president and general manager at St. Louis, which position he held until his election as president in 1933.

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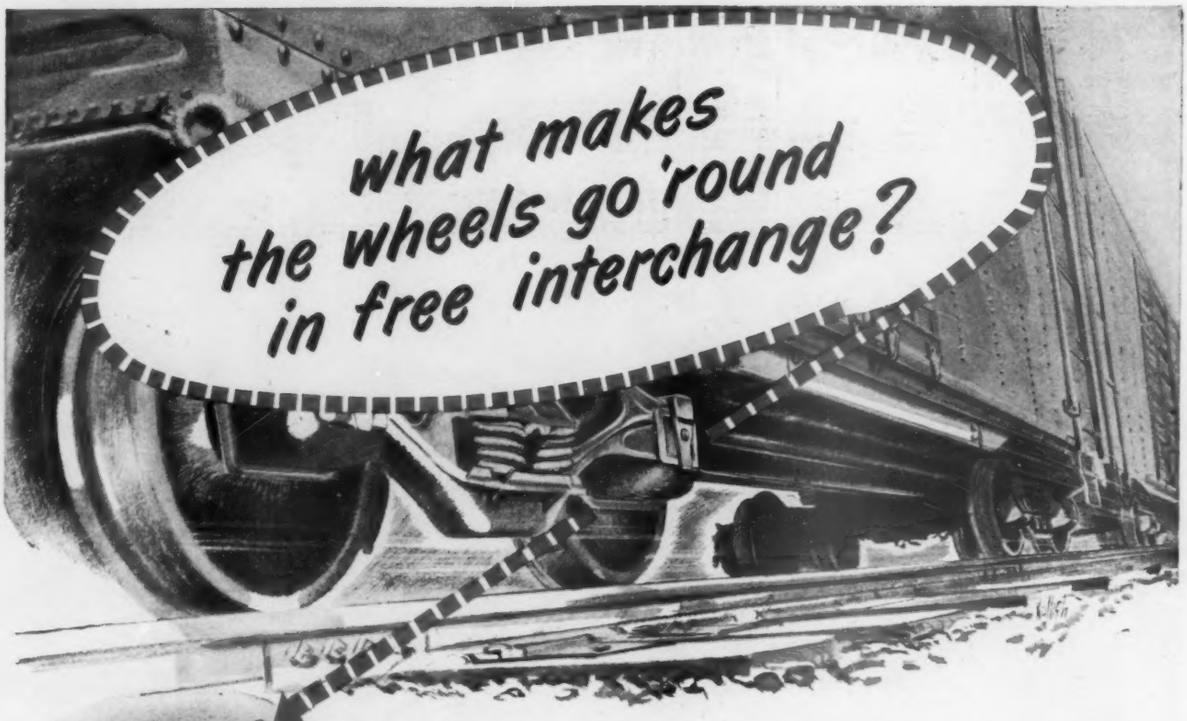
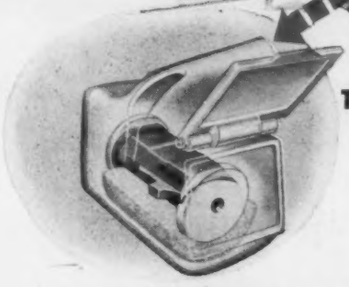
REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1950

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating Expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income: 1950	1949
Akron, Canton & Youngstown	Sept.	171	445,851	46	467,086	63,252	40,795	29,749	128,754	284,844	61.0	182,242	79,468	86,327	43,628
	9 mos.	171	3,598,956	633	3,720,804	555,768	372,323	264,501	1,098,781	2,483,479	66.7	1,237,325	499,236	655,579	378,170
Atchison, Topeka & Santa Fe System	Sept.	13,073	38,007,495	4,297,969	45,857,266	6,153,933	7,254,594	975,680	13,404,146	29,465,554	64.25	16,391,712	8,335,927	8,042,316	4,983,995
	9 mos.	13,073	300,030,344	33,295,781	364,068,310	53,400,778	64,352,160	8,714,073	114,355,057	256,088,621	70.34	107,979,689	56,372,319	51,312,289	38,097,798
Atlanta & St. Andrews Bay	Sept.	82	240,376	1,847	247,798	30,538	20,599	7,516	53,525	123,559	49.9	124,239	41,117	61,739	45,773
	9 mos.	82	2,127,064	12,495	2,195,904	290,361	167,275	64,890	472,979	1,106,313	50.4	1,089,591	422,822	466,968	213,604
Atlanta & West Point	Sept.	...	298,968	40,535	408,354	47,627	49,377	13,794	159,700	293,297	71.8	115,057	44,377	42,157	3,586
	9 mos.	...	2,362,683	378,553	3,109,348	343,073	437,070	124,056	1,406,847	2,510,052	80.7	599,296	286,211	125,236	8,769
Western of Alabama	Sept.	133	309,757	37,825	402,527	43,230	58,658	14,082	140,431	277,316	68.9	125,211	57,733	56,084	38,641
	9 mos.	133	2,408,840	365,483	3,056,416	400,415	499,040	126,682	1,246,632	2,458,121	80.4	598,295	336,792	235,551	197,900
Atlantic & Danville	Sept.	205	123,076	.....	124,979	24,000	7,201	7,805	37,103	86,999	69.6	37,980	5,326	11,088	—30,386
	9 mos.	205	1,001,148	.....	1,017,132	215,924	70,763	69,760	322,795	771,211	75.8	245,921	62,190	56,033	—56,223
Atlantic Coast Line	Sept.	5,499	8,372,570	1,113,613	10,269,692	1,946,251	1,926,119	270,439	3,894,405	8,493,834	82.7	1,775,858	1,700,000	225,328	70,094
	9 mos.	5,512	76,600,923	12,633,909	96,482,951	17,563,529	16,501,151	2,585,488	37,502,612	78,725,148	81.6	17,757,803	10,500,000	6,210,934	4,192,690
Charleston & Western Carolina	Sept.	343	374,475	4,265	389,086	81,961	57,410	14,746	142,663	307,041	78.9	82,045	45,000	42,385	32,065
	9 mos.	343	3,539,108	21,120	3,640,674	692,353	529,602	137,199	1,403,770	2,856,973	78.5	783,701	365,000	378,482	46,199
Baltimore & Ohio	Sept.	6,201	31,862,728	1,844,248	35,893,354	5,095,301	7,474,647	745,232	13,685,307	28,244,191	78.7	7,649,163	3,394,480	3,522,541	2,095,731
	9 mos.	6,201	259,394,232	16,134,647	291,839,073	37,576,641	61,489,650	6,948,765	117,601,669	235,240,781	80.6	56,598,292	24,649,984	26,347,177	23,915,750
Staten Island Rapid Transit	Sept.	29	205,905	43,544	253,314	47,576	38,382	1,349	124,996	235,384	92.9	17,930	33,558	—30,418	—33,774
	9 mos.	29	1,629,458	436,345	2,098,044	386,802	337,876	13,534	1,127,498	2,067,760	98.6	30,284	296,428	—393,191	—428,377
Bangor & Aroostook	Sept.	602	547,830	33,905	611,688	182,151	151,184	12,068	239,899	631,154	103.2	—19,466	36,872	—10,178	—98,309
	9 mos.	602	8,814,870	275,579	9,395,257	1,636,890	1,484,934	119,887	2,348,483	6,024,577	64.1	3,370,680	1,570,854	1,717,537	1,634,487
Bessemer & Lake Erie	Sept.	212	2,661,056	2,012	2,687,298	205,516	639,140	14,505	472,796	1,419,086	52.8	1,268,212	950,176	569,179	328,038
	9 mos.	212	17,832,347	9,748	18,020,013	1,603,570	6,025,083	142,293	3,829,022	12,383,164	68.7	5,636,849	3,795,669	3,835,516	4,061,839
Boston & Maine	Sept.	1,711	5,752,655	976,524	7,440,822	1,146,373	928,192	94,632	2,892,913	5,345,762	71.8	2,095,060	918,102	778,277	363,884
	9 mos.	1,712	48,409,733	8,746,051	6,796,230	10,363,970	9,144,531	940,579	26,041,180	49,171,347	78.3	13,624,883	6,029,982	4,348,837	3,584,281
Cambria & Indiana	Sept.	35	141,754	.....	141,909	12,843	59,302	207	24,413	106,312	74.92	35,597	112,776	58,066	8,954
	9 mos.	35	1,064,626	.....	1,065,277	125,665	655,428	6,403	197,708	1,109,853	104.18	—44,576	497,878	456,637	418,024
Canadian Pacific Lines in Maine	Sept.	234	244,760	34,912	302,818	131,145	49,494	6,856	127,586	325,011	107.3	—22,193	24,307	—86,221	—69,208
	9 mos.	234	3,290,058	326,754	3,828,889	924,609	590,057	58,762	1,553,031	3,225,458	84.2	603,431	222,441	—145,268	—17,253
Canadian Pacific Lines in Vermont	Sept.	90	172,409	17,213	210,628	46,801	21,980	5,463	111,974	192,207	91.3	18,421	11,767	—48,888	—84,599
	9 mos.	90	1,402,719	118,288	1,672,493	607,948	208,365	47,732	948,961	1,872,257	111.9	—119,764	107,891	—768,862	—1,027,876
Central of Georgia	Sept.	1,815	2,734,579	194,786	3,157,789	549,782	526,894	103,597	1,403,295	2,747,384	87.0	410,405	210,704	187,080	50,508
	9 mos.	1,815	23,878,836	1,910,224	27,850,664	4,765,804	4,669,760	991,556	12,713,443	24,662,385	88.6	3,188,279	1,946,262	899,212	180,011
Central of New Jersey	Sept.	410	3,063,041	508,152	3,810,439	532,306	589,843	52,036	1,646,989	2,957,566	77.6	852,873	375,812	116,434	—230,477
	9 mos.	410	23,091,996	4,446,046	29,298,946	4,272,832	4,817,016	479,340	14,376,754	25,326,053	86.4	3,972,893	3,336,064	—2,331,713	—3,471,941
Central of Pennsylvania	Sept.	212	1,651,831	8,764	1,700,036	223,868	368,029	20,763	464,656	1,114,589	65.6	585,447	91,797	753,845	617,130
	9 mos.	212	14,029,368	82,395	14,417,304	1,494,420	2,967,696	209,667	4,129,737	9,151,327	63.5	5,265,977	634,018	7,166,769	6,272,202
Central Vermont	Sept.	422	760,000	61,000	876,000	175,686	153,399	15,093	361,199	737,991	84.2	138,009	47,408	14,176	—59,845
	9 mos.	421	6,703,000	516,000	7,718,000	1,401,126	1,269,362	137,520	3,201,973	6,330,156	82.0	1,387,842	411,062	442,117	120,736
Chesapeake & Ohio	Sept.	5,116	27,120,951	694,806	29,086,086	3,602,441	4,862,893	476,785	8,781,248	18,772,716	64.5	10,313,370	5,829,454	5,086,015	155,625
	9 mos.	5,118	216,072,904	5,798,940	230,976,057	32,096,524	42,814,994	4,469,292	74,361,990	162,981,827	70.6	67,994,230	35,288,315	35,432,327	24,303,472
Chicago & Eastern Illinois	Sept.	886	2,195,720	235,602	2,701,410	287,519	349,158	96,440	923,574	1,786,401	66.1	915,009	280,200	540,184	162,282
	9 mos.	893	17,228,578	2,082,115	21,429,662	2,648,109	3,095,359	854,628	8,366,301	16,090,905	75.1	5,338,757	1,469,600	2,637,457	735,443
Chicago & Illinois Midland	Sept.	130	953,084	196	967,821	84,799	128,556	23,543	209,316	478,518	49.4	489,303	210,797	258,479	—58,670
	9 mos.	130	7,428,828	2,525	7,558,039	760,707	1,105,394	216,089	1,837,314	4,237,295	56.1	3,320,744	1,385,834	1,812,056	867,638
Chicago & North Western	Sept.	7,977	14,066,355	1,763,485	17,523,976	2,636,883	2,683,048	295,469	7,283,318	13,638,652	77.8	3,885,324	1,062,390	2,167,645	1,270,385
	9 mos.	8,020	106,279,962	15,522,053	135,605,540	22,074,615	25,493,926	2,792,315	61,457,377	118,360,293	87.3	17,245,247	9,431,305	4,312,763	—810,358
Chicago, Burlington & Quincy	Sept.	8,830	19,858,576	1,784,682	23,519,827	3,198,438	2,659,841	411,922	7,118,623	14,062,123	59.8	9,457,704	4,516,983	4,412,909	2,687,361
	9 mos.	8,847	140,280,893	13,248,734	168,730,642	25,698,033	25,892,146	3,711,020	58,678,228	120,160,400	71.2	48,570,242	23,529,604	21,511,956	11,433,291
Chicago Great Western	Sept.	1,476	2,837,595	30,349	3,450,741	925,209	330,117	95,956	949,483	2,374,996	68.8	1,075,745	420,591	439,007	184,303
	9 mos.	1,478	22,321,227	165,753	24,197,238	5,452,938	2,696,041	862,740	7,502,080	17,151,092	70.9	7,046,146	2,226,799	2,675,559	1,712,828
Chicago, Indianapolis & Louisville	Sept.	541	1,530,269	83,826	1,893,803	295,598	232,386	73,489	585,819	1,270,263	67.1	623,540	251,207	290,311	155,940
	9 mos.	541	12,762,628	716,271	14,475,728	2,565,633	2,064,071	674,343	4,956,418	11,033,638	76.2	3,442,090	1,222,841	1,404,971	633,727
Chicago, Milwaukee, St. Paul & Pacific	Sept.	10,671	20,257,014	1,568,435	24,062,451	3,013,218	3,689,303	390,775	8,978,486	16,965,238	70.5	7,097,213	3,347,000	3,156,945	2,165,498
	9 mos.	10,671	151,774,730	12,950,121	181,829,167	26,077,996	33,480,132	3,768,793	77,092,155	148,356,649	81.6	33,472,518	17,469,000	11,932,252	7,139,439
Chicago, Rock Island & Pacific	Sept.	7,601	12,946,049	1,690,929	16,490,672	2,386,577	2,555,839	451,063	5,441,322	11,546,910	70.0	4,943,762	1,866,076	2,284,833	2,267,371
	9 mos.	7,613	106,164,170	13,079,189	129,611,284	17,153,945	21,258,171	3,948,187	47,560,686	96,007,687	74.1	33,603,597	14,523,443	12,895,093	14,347,712
Chicago, St. Paul, Minn. & Omaha	Sept.	1,617	2,975,431	182,091	3,365,922	453,116	355,756	57,424	1,387,601	2,364,936	70.3	1,000,986	193,299	565,971	366,101
	9 mos.	1,617	20,643,581	1,570,300	23,969,053	3,700,198	3,293,842	507,075	11,698,051	20,227,306	84.4	3,741,747	1,624,284	644,233	—89,244
Clinchfield	Sept.	317	1,792,742	1,726	1,806,633	183,487	296,614	34,858	367,110	912,151	50.5	894,482	192,903	868,298	349,549
	9 mos.	317	14,916,061	18,006	15,021,486	1,978,530	2,661,528	304,196	3,411,358	8,622,440	57.4	6,399,046	1,527,491	5,955,287	3,443,727

(Continued on page 90)





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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1950

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic	Transportation	Total				1950	1949
Colorado & Southern	Sept.	740	1,295,725	101,802	1,493,534	185,953	166,286	23,410	472,037	896,523	60.0	597,011	273,220	236,306	93,673
	9 mos.	742	8,665,576	651,529	10,082,144	1,510,296	1,455,658	223,082	3,540,311	7,172,427	71.1	2,909,717	1,468,599	928,929	643,415
Ft. Worth & Denver City	Sept.	1,130	1,277,752	165,532	1,578,377	211,862	186,167	46,884	579,839	1,103,586	69.9	474,791	153,631	186,824	103,102
	9 mos.	1,004	11,626,228	1,110,346	13,749,400	1,937,416	1,757,171	431,610	4,614,568	9,420,694	68.5	4,328,706	1,478,951	1,923,168	1,435,653
Colorado & Wyoming	Sept.	41	140,684	.....	230,014	42,625	25,676	1,155	86,504	165,980	72.1	64,034	48,962	15,865	22,806
	9 mos.	41	1,023,211	.....	1,722,788	165,342	186,496	8,096	696,342	1,142,145	66.2	580,643	347,144	232,132	335,621
Columbus & Greenville	Sept.	168	134,831	109	142,327	70,440	20,243	4,470	48,850	160,342	112.7	—18,015	—19,640	3,864	5,952
	9 mos.	168	1,326,604	Dr 84	1,383,148	394,661	274,875	42,367	444,467	1,311,243	94.8	71,905	103,271	—9,673	90,873
Delaware & Hudson	Sept.	793	4,180,364	205,523	4,519,964	608,510	924,767	68,802	1,687,507	3,458,494	76.5	1,061,470	454,276	299,027	430,087
	9 mos.	794	36,988,532	1,486,791	39,543,261	5,257,056	8,547,272	645,238	15,551,240	31,546,564	79.8	7,996,697	4,212,088	3,891,672	2,566,309
Delaware, Lackawanna & Western	Sept.	966	5,674,301	817,990	7,116,390	761,181	1,194,548	144,702	2,997,603	5,324,205	74.8	1,792,185	895,564	832,985	706,608
	9 mos.	967	46,983,265	7,301,473	59,091,020	7,077,866	10,281,046	1,379,938	26,291,764	47,143,065	79.8	11,947,955	6,132,412	5,705,041	4,763,256
Denver & Rio Grande Western	Sept.	2,400	6,304,853	304,325	6,845,927	775,992	1,060,869	151,835	2,080,987	4,315,405	63.0	2,530,522	1,224,394	1,241,320	664,868
	9 mos.	2,412	41,673,145	2,284,659	35,782,318	5,968,669	8,758,882	1,312,476	16,249,075	34,481,433	75.3	11,300,885	5,713,986	5,785,319	5,935,750
Detroit & Mackinac	Sept.	232	205,867	672	213,555	35,000	20,376	1,928	37,919	101,053	47.3	112,501	51,324	52,576	50,950
	9 mos.	232	1,494,935	6,050	1,570,067	280,000	173,740	15,744	295,218	830,428	52.9	739,639	310,672	408,526	283,287
Detroit & Toledo Shore Line	Sept.	50	618,573	.....	621,203	64,457	57,398	12,662	210,388	355,344	57.2	265,859	85,136	84,308	60,179
	9 mos.	50	5,505,886	.....	5,528,529	580,079	462,609	122,497	1,697,123	2,966,121	53.7	2,562,408	804,735	862,547	691,061
Detroit, Toledo & Ironton	Sept.	464	1,398,768	361	1,476,296	189,842	282,197	23,991	399,904	938,461	63.6	537,835	230,300	253,826	202,204
	9 mos.	464	12,921,478	3,487	13,348,577	1,450,710	2,190,206	218,246	3,551,379	7,749,717	58.1	5,598,860	2,304,540	2,683,023	2,170,159
Duluth, Missabe & Iron Range	Sept.	560	5,857,362	1,970	6,836,021	537,330	555,140	8,166	1,647,369	2,815,726	41.2	4,020,295	2,303,828	1,672,540	1,466,474
	9 mos.	563	29,623,168	16,576	34,729,980	4,937,211	4,850,302	70,684	9,620,578	20,087,920	57.8	14,642,060	7,716,392	6,717,647	8,542,392
Duluth, South Shore & Atlantic	Sept.	539	654,112	9,269	691,625	93,438	83,890	18,844	245,465	447,524	64.7	244,101	27,335	189,466	—78,842
	9 mos.	539	4,817,523	68,557	5,155,280	1,014,897	875,978	169,509	1,907,202	4,104,893	79.6	1,050,387	228,871	600,249	—288,275
Duluth, Winnipeg & Pacific	Sept.	175	414,000	1,500	421,400	91,380	42,892	4,256	163,500	307,501	73.0	113,899	32,099	43,356	—28,769
	9 mos.	175	3,166,000	13,700	3,226,100	598,036	403,026	37,261	1,361,647	2,455,862	76.1	770,238	252,994	122,949	—308,100
Elgin, Joliet & Eastern	Sept.	238	3,708,894	.....	4,430,155	283,937	464,324	26,976	1,191,246	2,087,217	47.1	2,342,938	1,241,586	816,635	387,134
	9 mos.	238	29,788,676	18	36,001,768	2,569,886	4,531,918	238,747	11,230,083	19,599,070	54.4	16,402,698	6,667,852	6,845,813	5,082,293
Erie	Sept.	2,228	13,390,895	641,309	15,047,853	1,947,541	2,203,335	305,558	5,721,718	10,799,877	71.8	4,247,976	1,866,795	1,761,907	1,056,119
	9 mos.	2,230	107,166,114	5,409,708	120,286,971	14,831,632	18,361,354	2,798,204	48,691,737	89,965,366	74.8	30,321,605	13,276,603	13,310,975	6,973,553
Florida East Coast	Sept.	571	1,105,635	309,101	1,576,304	382,525	400,631	62,061	652,919	1,649,742	104.7	—73,438	146,682	—285,214	—348,828
	9 mos.	571	13,593,489	4,997,331	20,333,859	3,774,939	3,504,409	564,753	7,203,343	16,549,899	81.4	3,783,960	1,360,873	1,341,283	—145,395
Georgia Railroad	Sept.	326	697,001	43,125	829,139	90,040	107,542	27,134	299,529	556,642	67.1	272,497	34,477	245,831	98,247
	9 mos.	326	5,543,460	267,684	6,242,565	820,698	942,318	241,721	2,654,555	4,949,550	79.3	1,293,015	305,307	1,150,468	630,896
Georgia & Florida	Sept.	359	235,259	25	239,325	67,666	26,632	16,510	82,927	209,616	87.6	29,709	15,545	—2,213	—29,887
	9 mos.	359	2,147,547	78	2,174,890	565,081	284,352	138,260	873,706	1,974,515	90.8	200,375	142,215	—77,211	—252,229
Grand Trunk Western	Sept.	974	4,462,000	223,000	5,015,000	759,960	757,076	65,472	1,974,442	3,695,508	73.7	1,319,492	165,758	845,974	77,047
	9 mos.	971	37,204,000	1,686,000	41,480,000	6,011,955	6,806,048	588,076	17,182,204	31,941,658	77.0	9,538,342	1,901,538	5,618,192	2,355,519
Canadian Nat'l Lines in New Eng.	Sept.	172	170,000	12,000	228,000	71,379	45,741	2,962	118,500	251,656	110.3	—23,656	22,478	—83,706	—107,804
	9 mos.	172	1,386,000	75,800	1,760,000	571,998	395,308	24,748	1,076,542	2,182,272	124.0	—422,272	202,302	—954,521	—1,123,886
Great Northern	Sept.	8,316	23,739,669	1,103,889	26,503,998	2,851,052	3,064,248	324,394	6,716,883	13,631,058	51.4	12,872,940	6,089,281	6,510,688	4,805,808
	9 mos.	8,316	131,970,692	7,998,019	151,703,991	28,687,851	27,591,155	2,920,565	54,404,560	119,360,810	78.7	32,343,181	18,379,417	11,821,713	15,337,534
Green Bay & Western	Sept.	224	319,520	.....	327,444	69,110	45,516	19,866	78,828	227,658	69.5	99,786	46,491	39,186	2,427
	9 mos.	224	2,755,539	Cr 13	2,815,919	533,578	360,543	172,325	708,321	1,892,756	67.2	923,163	378,731	406,331	55,956
Gulf, Mobile & Ohio	Sept.	2,898	5,969,125	412,173	7,129,374	545,423	1,133,626	228,587	1,877,452	4,069,798	57.1	3,059,576	2,474,822	259,756	583,959
	9 mos.	2,898	47,996,027	3,602,052	55,709,753	8,359,358	10,193,457	2,026,514	17,257,558	40,483,229	72.7	15,226,524	7,498,602	5,255,778	5,163,989
Illinois Terminal	Sept.	6,543	19,368,744	1,946,221	23,662,764	3,822,987	4,045,606	449,366	8,049,139	17,241,627	73.0	6,381,137	3,502,395	2,814,776	1,905,856
	9 mos.	6,543	160,611,031	15,700,224	195,336,296	31,687,390	33,984,277	3,938,013	70,853,773	148,596,108	76.1	46,740,188	24,921,572	20,256,308	16,782,533
Illinois Central	Sept.	462	832,897	84,733	1,041,995	132,976	128,180	34,907	386,723	729,144	69.98	312,851	159,826	128,680	146,124
	9 mos.	462	6,994,860	814,836	8,807,960	1,264,071	1,170,363	322,639	3,494,362	6,673,369	75.76	2,134,591	1,061,709	894,313	963,412
Kansas City Southern	Sept.	891	2,907,394	125,993	3,810,893	408,255	475,931	84,119	953,838	2,024,427	53.1	1,786,466	730,000	839,668	774,519
	9 mos.	891	25,106,196	930,827	28,783,686	2,722,096	3,607,085	799,171	8,358,159	16,462,251	57.2	12,321,435	4,574,000	6,086,304	6,773,976
Kansas, Oklahoma & Gulf	Sept.	327	441,184	641	445,526	51,513	35,806	16,214	109,728	231,786	52.0	213,740	99,346	87,203	—1,568
	9 mos.	327	3,867,470	5,557	3,905,393	447,777	336,737	151,899	997,496	2,101,956	53.8	1,803,437	804,928	764,026	651,764
Lake Superior & Ishpeming	Sept.	156	383,509	29	480,862	49,698	36,064	1,864	98,755	195,837	40.7	285,025	143,931	149,656	245,043
	9 mos.	156	2,205,009	324	2,713,896	417,128	398,688	16,187	681,089	1,605,414	59.2	1,108,482	651,472	513,074	887,417
Lehigh & Hudson River	Sept.	96	267,669	.....	268,446	35,480	28,731	8,969	91,333	172,459	64.2	95,987	38,492	36,760	18,010
	9 mos.	96	2,204,801	.....	2,209,541	317,600	225,989	80,550	824,541	1,525,908	69.1	683,633	279,993	213,053	92,572
Lehigh & New England	Sept.	191	870,888	.....	878,613	62,726	103,178	10,843	180,480	385,843	43.9	492,770	312,844	190,889	148,768
	9 mos.	191	6,099,477	.....	6,146,866	684,531	981,927	105,592	1,468,951	3,512,513	57.1	2,634,353	1,375,357	1,589,985	1,149,836
Lehigh Valley	Sept.	1,240	5,811,583	292,863	6,384,209	792,205	1,074,243	128,134	2,447,023	4,660,128	73.0	1,724,081	779,782	803,268	587,431
	9 mos.	1,250	47,013,090	2,660,431	51,945,936	6,527,978	8,958,225	1,194,156	21,090,835	39,815,251	76.6	12,130,685	5,108,150	5,653,732	4,035,501
Long Island	Sept.	365	1,273,093	2,909,809	4,405,009	548,456	721,402	28,120	1,971,676	3,418,893	77.6	986,116	452,250	222,545	—50,193
	9 mos.	365	10,155,222	25,209,740	37,046,244	5,076,290	6,587,506	164,209	18,118,358	31,009,700	83.7	6,036,544	4,058,178	—527,516	—2,243,449

(Continued on page 92)

on Southern Pacific's NEW *SUNSET LIMITED...*

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NP *Automatic* End Door Operators!

There are three good reasons why you find NP Automatic End Door Operators in service on over 25 Class I railroads—on both new and remodeled passenger equipment. For these modern, effortless Door Operators appeal to three important groups—passengers, operating and maintenance men, and top officials.

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WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL AND SAFETY EQUIPMENT

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1950

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic	Transportation	Total				1950	1949
Louisiana & Arkansas	Sept.	756	1,864,501	67,200	2,096,965	331,954	189,278	45,237	526,648	1,143,253	54.5	953,712	467,330	370,893	305,500
	9 mos.	756	14,170,150	595,927	15,471,121	1,994,686	1,637,240	421,207	4,469,664	9,027,626	58.4	6,443,495	2,669,762	2,912,279	2,383,480
Louisville & Nashville	Sept.	4,778	16,116,201	1,105,193	18,151,481	2,126,176	3,337,175	289,310	6,385,204	12,709,617	70.0	5,441,864	3,555,315	2,794,924	656,993
	9 mos.	4,779	128,088,378	9,077,488	145,180,290	19,987,962	29,105,248	2,705,573	56,196,022	113,067,165	77.9	32,113,125	21,958,720	16,597,929	10,173,242
Maine Central	Sept.	981	1,645,230	154,753	1,936,545	384,342	350,385	17,475	697,216	1,517,344	78.4	419,201	219,411	180,966	84,451
	9 mos.	981	15,450 051	1,260,117	17,873,031	3,486,043	3,253,389	169,980	6,425,371	13,942,017	78.0	3,931,014	2,018,307	1,615,548	1,663,378
Midland Valley	Sept.	334	187,909	7	191,183	38,033	14,325	3,448	53,201	115,804	60.6	75,379	17,987	44,163	11,581
	9 mos.	334	1,476,214	40	1,503,956	372,241	140,817	33,737	494,889	1,108,320	73.7	395,636	161,802	129,212	108,939
Minneapolis & St. Louis	Sept.	1,416	2,116,034	6,169	2,178,186	319,052	220,899	106,747	549,679	1,286,720	59.1	891,466	403,004	412,058	130,134
	9 mos.	1,416	14,327,139	63,855	14,810,554	2,519,703	2,221,658	962,186	4,588,696	11,143,314	75.2	3,667,240	1,800,241	1,553,129	807,415
Minneapolis, St. Paul & S. S. Marie	Sept.	3,224	3,530,773	105,587	3,811,671	630,789	463,335	67,794	1,352,334	2,620,324	68.7	1,191,347	416,357	715,725	815,835
	9 mos.	3,224	24,058,251	835,567	26,287,123	5,830,029	4,631,848	602,238	11,008,447	23,061,219	87.7	3,225,904	2,116,792	836,520	1,689,103
Mississippi Central	Sept.	148	231,970	Dr 64	237,290	51,774	23,908	12,636	58,544	155,211	65.4	82,079	35,662	33,019	12,374
	9 mos.	148	1,716,970	105	1,753,401	381,537	223,906	111,604	463,165	1,259,037	71.8	494,364	214,433	197,055	98,134
Missouri-Illinois	Sept.	172	402,038	191	405,302	63,018	54,542	8,424	105,732	240,945	59.4	164,357	81,540	81,873	89,295
	9 mos.	172	3,335,458	2,088	3,360,391	556,185	476,140	66,688	882,415	2,051,434	61.0	1,308,957	713,739	580,608	661,311
Missouri-Kansas-Texas Lines	Sept.	3,243	5,504,431	431,356	6,811,796	970,102	893,297	221,630	2,229,597	4,599,164	67.5	2,212,632	1,029,308	887,467	917,090
	9 mos.	3,247	48,063,161	3,132,404	55,916,161	8,405,895	7,845,925	2,001,423	19,944,218	40,706,985	72.8	15,209,176	6,508,814	5,993,787	5,138,903
Missouri Pacific	Sept.	6,966	16,835,499	916,243	19,358,678	2,984,835	3,150,527	426,015	6,499,151	13,612,573	70.3	5,746,105	2,234,229	2,912,136	Strike per.
	9 mos.	6,967	134,193,294	8,015,662	155,879,729	23,925,878	26,647,068	3,666,866	57,832,399	117,099,068	75.1	38,780,661	14,467,794	19,270,204	Strike per.
Gulf Coast Lines	Sept.	1,711	2,828,216	90,852	3,096,414	529,961	520,331	78,213	1,062,219	2,323,106	75.0	773,308	250,902	319,661	302,556
	9 mos.	1,711	28,101,254	719,444	30,300,279	5,351,805	4,323,655	687,356	9,916,618	21,404,813	70.6	8,895,466	2,623,286	3,917,413	4,107,578
International-Great Northern	Sept.	1,089	2,346,799	207,851	2,802,928	541,814	520,946	51,003	1,123,644	2,351,397	83.9	451,531	117,490	214,266	—14,234
	9 mos.	1,101	20,583,467	1,561,835	24,342,405	4,513,356	4,307,469	456,415	9,421,030	19,696,689	80.9	4,645,716	1,234,647	2,177,809	1,802,836
Monongahela	Sept.	170	614,929	436	619,459	73,745	80,636	994	209,102	369,431	59.6	250,028	Cr 43,977	143,903	176,414
	9 mos.	170	4,306,423	4,962	4,345,853	616,369	571,724	8,782	1,645,413	2,895,347	66.6	1,450,506	271,032	273,782	516,787
Montour	Sept.	51	286,727	.....	287,055	26,116	86,500	795	84,624	204,791	71.3	82,264	66,375	68,906	27,312
	9 mos.	51	1,984,099	.....	1,987,823	259,112	606,788	7,745	644,221	1,601,559	80.6	386,264	401,914	416,827	490,800
Nashville, Chatt. & St. Louis	Sept.	1,049	2,667,228	152,630	3,086,376	534,478	432,148	100,260	1,080,286	2,250,618	72.9	835,758	417,441	439,196	320,459
	9 mos.	1,049	22,079,372	1,286,480	25,705,275	4,408,528	3,587,220	916,959	9,365,090	19,229,294	74.8	6,475,981	3,268,599	3,138,866	2,298,272
New York Central	Sept.	10,733	49,346,611	9,872,199	68,597,614	8,173,244	12,980,352	1,021,325	28,422,382	53,489,117	78.0	15,108,497	6,997,706	6,198,219	2,303,819
	9 mos.	10,733	396,493,160	85,156,209	539,558,825	62,884,172	114,925,214	9,014,759	242,637,726	454,957,775	84.3	84,601,050	44,251,727	24,956,174	20,632,558
Pittsburgh & Lake Erie	Sept.	221	3,627,432	77,211	3,877,982	459,861	1,109,460	67,455	1,262,183	3,118,650	80.4	759,332	835,252	603,312	295,712
	9 mos.	221	28,694,966	663,416	30,499,570	3,366,791	7,969,724	610,137	10,682,866	24,311,305	79.7	6,188,265	5,336,143	5,847,481	5,192,031
New York, Chicago & St. Louis	Sept.	2,192	11,823,311	148,356	12,434,529	1,134,970	1,786,108	283,442	4,101,126	7,672,844	61.71	4,761,685	2,270,952	2,228,033	1,078,938
	9 mos.	2,192	101,602,723	1,319,540	106,194,845	12,541,856	16,393,639	2,558,236	35,390,314	70,413,154	66.31	35,781,691	15,485,083	17,793,476	13,993,630
New York, New Haven & Hartford	Sept.	1,795	7,534,867	4,084,761	12,817,882	1,846,110	1,919,559	185,754	5,196,196	9,749,939	76.1	3,067,943	1,310,000	909,016	570,907
	9 mos.	1,795	65,170,481	34,811,875	109,472,274	15,381,381	16,541,072	1,765,913	45,697,628	85,229,519	77.9	24,242,755	9,082,000	7,422,727	6,496,499
New York Connecting	Sept.	21	248,498	.....	265,077	88,051	19,622	.....	66,005	176,088	66.4	88,989	66,895	42,762	71,016
	9 mos.	21	2,154,586	.....	2,253,940	653,610	171,674	.....	530,625	1,378,312	61.2	875,628	561,490	463,035	149,507
New York, Ontario & Western	Sept.	544	571,453	13,400	621,605	120,538	82,888	25,958	281,848	540,663	87.0	80,942	38,781	—39,621	—93,061
	9 mos.	544	4,842,198	107,913	5,244,275	951,961	783,656	226,448	2,530,210	4,752,195	90.6	492,080	346,319	—515,610	—584,152
New York, Susquehanna & Western	Sept.	120	380,133	33,466	433,197	47,671	45,748	6,329	180,662	303,063	70.1	129,134	37,133	59,182	42,301
	9 mos.	120	3,301,568	344,323	3,768,363	418,379	452,359	57,615	1,587,433	2,750,962	73.0	1,017,401	294,996	393,443	174,975
Norfolk & Western	Sept.	2,127	14,556,549	415,120	15,536,442	1,900,987	2,651,844	252,542	4,255,931	9,599,800	61.8	5,936,642	3,973,109	3,151,074	743,410
	9 mos.	2,128	112,316,308	3,340,125	120,029,902	18,196,658	24,856,873	2,303,384	36,596,658	86,614,929	72.2	33,414,973	22,702,906	19,817,236	17,474,046
Norfolk Southern	Sept.	673	833,620	.....	855,706	160,195	99,036	43,090	267,178	632,996	74.0	222,710	100,357	85,946	54,888
	9 mos.	677	6,594,526	1,392	6,760,130	1,368,103	883,644	383,645	2,230,612	5,403,347	79.9	1,356,783	613,287	484,896	433,994
Northern Pacific	Sept.	6,903	16,352,616	484,296	17,977,206	2,140,470	2,347,432	248,597	4,989,263	10,308,345	57.3	7,668,861	3,908,618	3,820,969	2,157,323
	9 mos.	6,897	101,217,071	4,438,175	113,733,657	19,025,999	22,326,130	2,281,127	42,085,176	90,983,392	80.0	22,750,265	15,265,290	11,227,822	7,584,007
Northwestern Pacific	Sept.	331	867,802	7,340	987,615	190,460	105,777	4,880	371,933	680,251	68.9	307,364	138,662	126,283	122,207
	9 mos.	331	7,394,634	43,694	7,743,352	1,628,478	806,373	41,117	3,296,598	5,890,782	76.1	1,852,570	776,577	507,077	—1,462
Oklahoma City-Ada-Atoka	Sept.	132	69,446	.....	71,016	19,478	3,753	1,321	19,802	48,031	67.6	22,985	15,773	—3,805	8,924
	9 mos.	132	704,875	.....	715,285	200,582	36,739	12,662	193,655	478,922	67.0	236,363	96,164	29,958	73,111
Pennsylvania	Sept.	10,117	65,077,936	12,521,186	85,262,288	10,806,546	20,514,520	1,070,114	33,570,784	68,771,991	80.7	16,490,297	8,318,744	6,724,735	455,994
	9 mos.	10,118	498,457,462	104,319,490	661,262,313	83,154,038	154,782,215	10,103,222	281,558,491	555,230,300	84.0	106,032,013	50,058,239	42,420,729	30,740,965
Pennsylvania-Reading Seashore Lines	Sept.	386	649,114	280,445	976,537	142,485	79,519	11,845	592,012	860,520	88.1	116,017	92,268	—139,308	—313,189
	9 mos.	386	4,656,381	2,193,842	7,079,376	1,507,731	1,436,802	103,369	5,091,839	8,438,608	119.2	—1,359,232	816,171	—3,340,974	—3,357,583
Pittsburg & Shawmut	Sept.	97	234,172	.....	234,735	48,912	79,566	2,413	56,414	194,920	83.0	39,815	15,791	24,450	7,405
	9 mos.	97	1,901,331	.....	1,907,012	387,457	407,353	25,313	475,739	1,379,979	72.4	527,033	163,626	323,404	270,166

(Continued on page 94)

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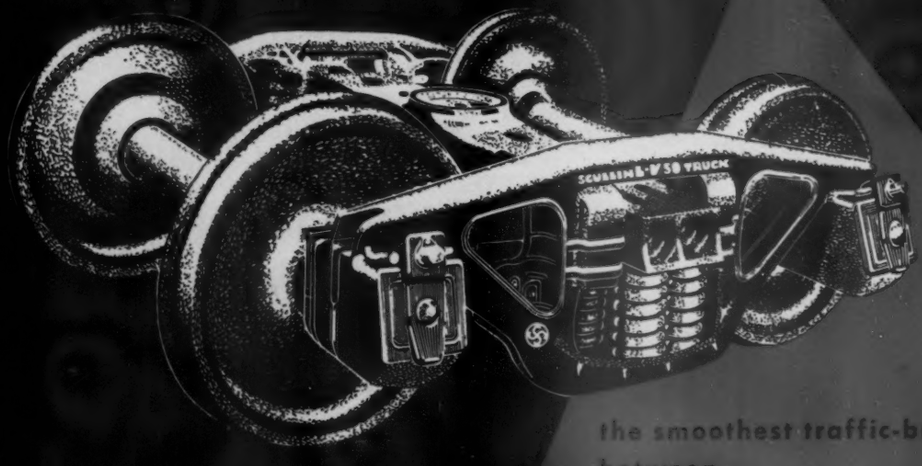

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1950

Name of road		Av. mileage operated during period	Operating revenues			Operating Expenses					Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income	
						Maintenance of									
			Freight	Passenger	Total (inc. misc.)	Way and structures	Equipment	Traffic	Transportation	Total				1950	1949
Pittsburgh & West Virginia	Sept.	132	811,487	.....	828,562	178,214	173,264	42,172	198,718	627,128	75.7	201,434	99,438	134,209	100,739
	9 mos.	132	6,095,241	.....	6,273,297	1,280,128	1,281,956	370,768	1,569,406	4,814,270	76.7	1,459,027	713,865	1,025,782	938,579
Reading	Sept.	1,317	9,643,620	556,931	10,797,612	1,539,295	2,189,616	122,243	3,818,525	7,962,870	73.7	2,834,742	1,389,859	1,284,832	763,763
	9 mos.	1,317	76,575,350	4,866,481	85,715,997	12,259,487	17,754,607	1,177,672	33,595,138	67,421,126	78.7	18,294,871	8,651,465	9,283,580	6,878,818
Richmond, Fredericksburg & Potomac	Sept.	118	1,231,559	421,410	1,864,259	221,758	231,011	17,548	581,090	1,148,535	61.6	715,724	303,288	328,570	47,133
	9 mos.	118	10,834,226	4,391,022	17,338,549	2,164,473	2,434,297	164,544	5,661,855	11,450,909	66.0	5,887,640	2,649,585	2,415,819	532,690
Rutland	Sept.	407	410,099	43,312	527,710	80,106	86,259	14,923	269,038	469,543	89.0	58,167	31,094	10,793	11,517
	9 mos.	407	3,347,841	279,056	4,223,923	648,830	724,408	126,464	2,252,413	3,911,331	92.6	312,592	258,709	—116,885	—399,322
Sacramento Northern	Sept.	271	456,235	59	467,374	59,857	19,145	1,947	106,455	194,909	41.7	272,465	111,499	136,187	58,371
	9 mos.	271	2,258,839	1,069	2,310,918	472,283	148,884	19,324	707,721	1,416,639	61.3	894,279	350,165	381,787	—177,960
St. Louis-San Francisco	Sept.	4,635	8,868,282	619,114	10,182,720	1,547,151	1,571,681	247,460	3,359,856	7,122,791	69.9	3,059,929	1,594,726	1,551,513	1,559,291
	9 mos.	4,635	71,807,961	4,203,535	81,674,346	13,223,005	13,662,984	2,100,590	30,077,820	62,669,633	76.7	19,004,713	10,027,454	9,475,532	6,519,123
St. Louis, San Francisco & Texas	Sept.	159	384,608	14,069	420,020	50,321	27,759	15,944	119,459	223,918	53.3	196,102	67,991	75,159	25,147
	9 mos.	159	2,827,352	81,335	3,088,361	443,250	298,843	137,471	1,212,192	2,182,319	70.7	906,042	225,624	214,560	262,427
St. Louis Southwestern Lines	Sept.	1,569	5,113,454	65,923	5,741,286	133,074	516,675	139,892	1,605,110	2,562,048	44.6	3,179,238	1,523,808	1,441,560	1,089,925
	9 mos.	1,569	42,874,658	435,866	45,400,643	5,608,583	5,174,158	1,259,685	13,591,690	27,159,815	59.8	18,240,828	7,777,182	8,523,821	6,621,855
Seaboard Air Line	Sept.	4,146	8,804,508	1,006,904	10,615,820	1,527,759	1,795,655	311,743	3,463,548	7,541,606	71.0	3,074,214	1,561,124	1,427,723	808,263
	9 mos.	4,146	80,879,083	10,717,985	98,404,423	15,091,683	16,798,774	2,832,802	34,314,805	73,303,938	74.5	25,100,485	11,423,512	11,720,044	8,018,086
Southern	Sept.	6,347	17,802,409	1,720,094	20,840,655	2,726,239	3,759,831	259,123	6,929,026	14,458,658	69.4	6,381,997	3,233,092	2,759,964	2,089,800
	9 mos.	6,347	144,991,526	12,724,315	169,299,625	23,060,083	31,057,181	3,097,651	60,092,515	124,201,276	73.4	45,098,349	22,240,094	20,230,124	14,825,936
Alabama Great Southern	Sept.	316	1,340,660	119,304	1,609,902	228,180	334,189	17,067	529,682	1,165,246	72.4	444,656	243,290	199,678	144,412
	9 mos.	316	10,857,661	839,313	12,678,155	1,847,295	2,626,348	243,123	4,355,091	9,574,680	75.5	3,163,475	1,943,380	1,335,059	1,123,757
Cinn., New Orleans & Texas Pacific	Sept.	337	3,380,016	190,930	3,725,911	380,410	645,520	46,791	923,603	2,107,632	56.5	1,618,279	825,185	921,317	458,815
	9 mos.	337	26,699,297	1,604,792	29,718,214	3,568,410	5,199,445	527,826	8,427,032	18,702,907	62.9	11,015,307	5,617,605	5,650,559	4,757,707
Georgia Southern & Florida	Sept.	397	495,406	57,841	594,526	141,592	71,910	7,755	191,779	428,800	72.1	165,726	42,717	37,286	31,578
	9 mos.	397	4,486,652	680,540	5,640,352	1,232,484	513,287	63,292	1,812,751	3,788,016	67.2	1,852,336	439,257	419,127	377,908
New Orleans & Northeastern	Sept.	204	969,080	58,472	1,082,163	146,242	88,158	12,884	234,360	521,777	48.2	560,386	260,573	236,450	215,064
	9 mos.	204	7,774,933	492,249	8,695,173	1,293,565	860,990	144,985	2,027,659	4,677,034	53.8	4,018,139	1,932,605	1,656,218	1,330,052
Southern Pacific	Sept.	8,144	36,533,369	3,562,309	48,746,592	4,398,444	7,869,209	693,232	14,460,480	29,246,262	60.0	19,500,330	9,381,287	9,171,714	4,185,621
	9 mos.	8,143	289,174,224	28,672,378	344,581,202	38,483,770	66,811,795	6,338,002	125,057,398	252,881,508	73.4	91,699,694	45,448,263	33,210,020	20,361,238
Texas & New Orleans	Sept.	4,316	9,956,672	762,222	12,855,614	1,719,208	1,587,197	219,333	3,943,140	7,956,951	61.9	4,898,663	2,047,917	21,30,613	1,732,956
	9 mos.	4,316	79,591,541	5,911,192	92,725,398	14,825,738	13,411,544	1,965,907	33,485,081	67,842,605	73.2	24,882,793	10,567,099	8,890,642	9,290,591
Spokane International	Sept.	152	176,219	942	192,126	33,351	18,030	4,324	51,581	115,688	60.2	76,438	11,721	48,432	18,693
	9 mos.	152	1,608,238	8,604	1,731,877	359,145	162,395	38,712	467,139	1,107,821	63.9	624,056	161,010	322,781	32,073
Spokane, Portland & Seattle	Sept.	944	2,405,078	78,332	2,607,223	403,085	271,708	21,684	707,231	1,481,155	56.8	1,126,068	168,914	915,108	348,546
	9 mos.	944	17,301,977	717,835	19,024,941	3,830,618	2,367,895	190,105	6,207,720	13,301,229	69.9	5,723,712	1,492,317	3,614,891	2,052,028
Tennessee Central	Sept.	286	363,849	8,218	394,411	76,247	52,449	10,454	127,230	283,915	72.0	110,496	26,282	55,420	71,230
	9 mos.	286	3,234,908	32,319	3,438,230	644,448	495,916	90,521	1,165,140	2,554,597	74.3	883,633	220,053	383,525	258,254
Texas & Northern	Sept.	8	102,917	.....	116,327	1,848	6,471	912	21,518	34,183	29.4	82,144	31,254	36,044	11,802
	9 mos.	8	788,981	.....	890,943	26,126	47,268	6,857	159,614	275,261	30.9	615,682	215,864	291,663	181,324
Texas & Pacific	Sept.	1,846	5,010,463	416,970	6,164,175	699,297	856,921	154,817	1,937,971	3,932,403	63.8	2,231,772	1,677,233	321,623	468,721
	9 mos.	1,846	42,657,973	3,527,213	50,400,889	7,121,288	7,712,469	1,393,558	17,244,252	35,987,133	71.4	14,413,756	5,875,025	5,705,727	4,857,365
Texas Mexican	Sept.	162	196,483	.....	229,939	59,458	22,821	5,803	57,162	161,706	70.3	68,233	50,466	—8,667	30,609
	9 mos.	162	2,259,338	.....	2,508,435	492,169	202,192	56,418	516,079	1,410,342	56.2	1,098,093	462,238	419,061	368,999
Toledo, Peoria & Western	Sept.	239	515,397	11	527,682	68,545	30,475	37,889	116,377	277,485	52.6	250,197	102,343	107,294	80,898
	9 mos.	239	3,998,338	125	4,067,970	616,428	282,602	325,714	930,824	2,368,158	58.2	1,699,812	651,812	706,957	506,938
Union Pacific	Sept.	9,720	39,387,321	3,032,364	45,355,160	5,159,844	7,101,435	730,417	14,219,752	29,203,433	64.4	16,151,727	7,877,288	6,299,150	4,076,200
	9 mos.	9,719	275,690,743	25,159,372	325,083,964	46,244,123	57,106,328	7,121,344	111,227,363	238,448,370	73.3	86,635,594	47,134,504	26,401,939	8,395,005
Utah	Sept.	110	166,409	.....	166,502	19,426	40,827	688	68,224	136,058	81.7	30,444	11,194	31,501	—35,615
	9 mos.	110	1,024,889	.....	1,028,461	171,092	421,827	6,298	458,503	1,123,586	109.2	—95,125	104,617	—103,235	—239,933
Virginian	Sept.	643	3,033,623	2,418	3,092,838	393,937	589,340	36,513	652,700	1,745,566	56.4	1,347,272	771,000	903,077	129,028
	9 mos.	653	23,028,845	23,263	23,521,861	3,159,590	5,000,794	333,833	5,393,019	14,568,892	61.9	8,952,969	4,910,100	6,183,843	5,087,487
Wabash	Sept.	2,393	7,472,525	477,206	8,601,143	1,199,475	1,074,475	257,618	3,341,328	6,188,209	71.9	2,412,934	1,058,296	929,358	744,124
	9 mos.	2,393	66,328,002	3,471,671	74,849,421	10,476,515	9,951,070	2,287,945	30,784,030	56,285,907	75.2	18,563,514	7,678,353	6,874,533	4,628,310
Ann Arbor	Sept.	294	775,944	2,440	796,838	79,630	90,356	23,425	312,824	530,318	66.6	266,520	105,047	130,006	50,940
	9 mos.	294	6,807,199	14,401	7,006,229	755,533	873,700	209,317	3,007,841	5,008,252	71.5	1,997,977	681,412	1,046,234	303,583
Western Maryland	Sept.	837	3,813,053	6,736	3,947,005	498,295	705,881	73,269	1,107,694	2,514,426	63.7	1,432,579	864,000	790,046	418,983
	9 mos.	837	28,753,783	83,119	29,988,243	3,949,881	6,002,117	652,925	9,102,437	20,923,149	69.8	9,065,094	4,965,000	5,818,768	5,344,142
Western Pacific	Sept.	1,195	5,159,569	209,748	5,471,153	576,234	653,142	145,822	1,234,659	2,786,607	50.9	2,684,546	1,167,395	1,379,197	280,587
	9 mos.	1,195	31,374,491	2,047,873	34,176,989	4,774,897	5,098,522	1,283,954	10,145,681	22,897,204	67.0	11,279,785	4,758,143	5,936,982	2,689,113
Wisconsin Central	Sept.	1,051	2,659,646	42,343	2,862,896	510,936	323,158	58,933	987,293	1,966,658	68.7	896,238	504,550	196,356	262,898
	9 mos.	1,051	20,136,036	342,256	21,683,452	3,183,003	3,071,766	532,045	8,235,483	15,806,148	72.9	5,877,304	2,082,268	2,425,807	1,802,478

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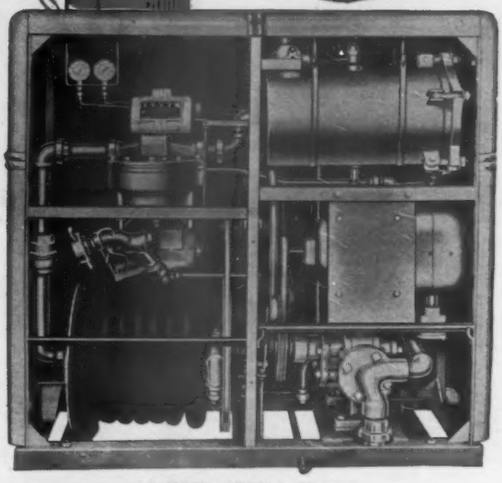

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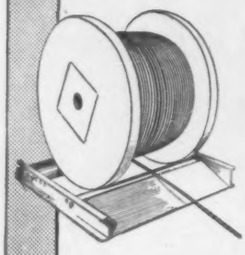

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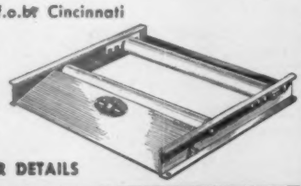

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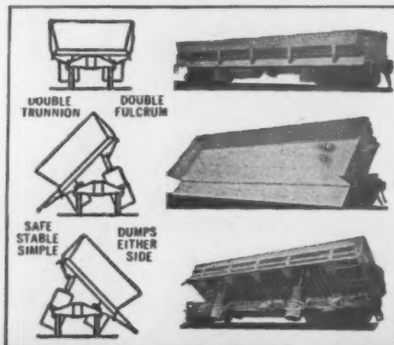

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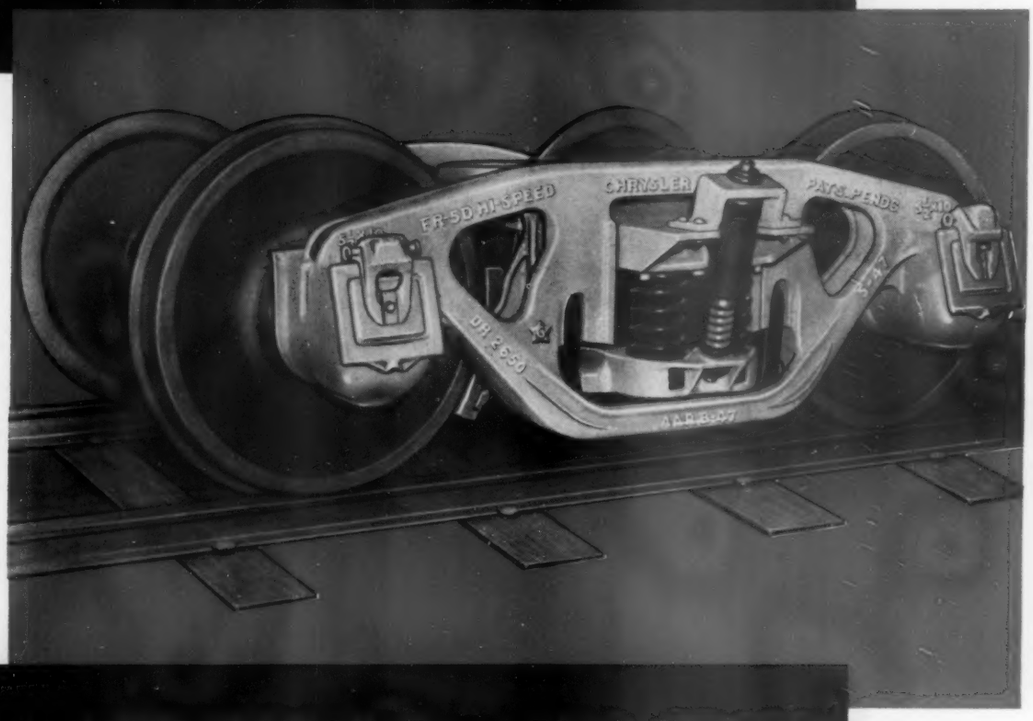

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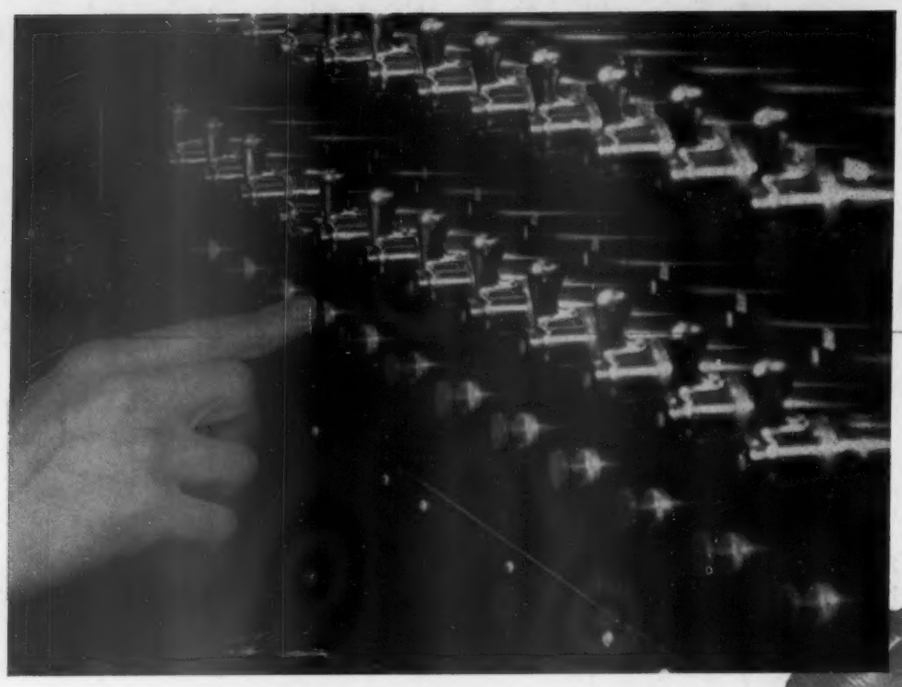

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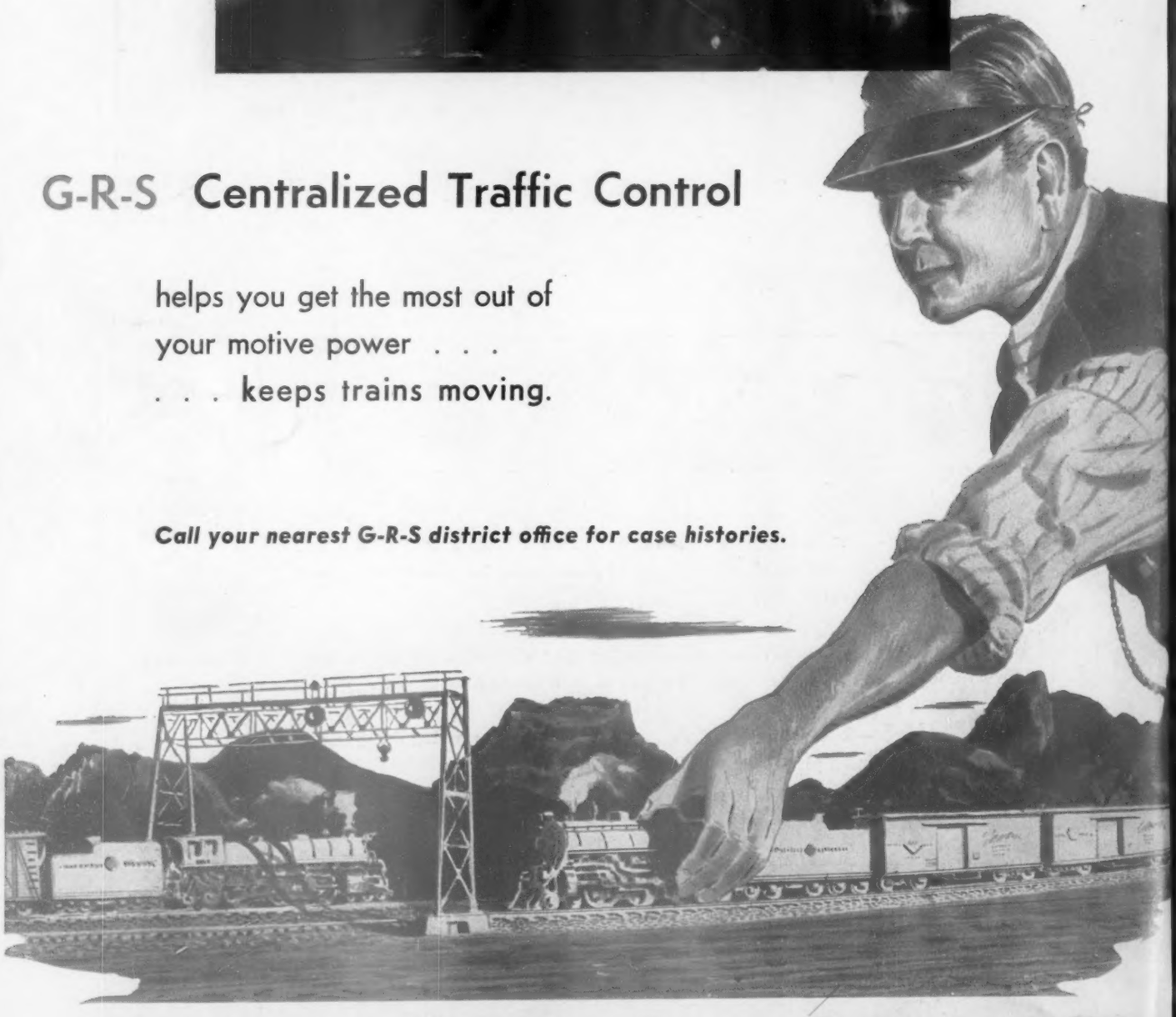

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